Volume 2, Issue 12, 2024

Print ISSN: 2959-992X
Online ISSN: 2959-9938

TRENDS IN SOCIAL SCIENCES AND HUMANITIES RESEARCH

Trends in Social Sciences and Humanities Research

Volume 2, Issue 12, 2024

Published by Upubscience Publisher

Trends in Social Sciences and Humanities Research
Print ISSN: 2959-992X Online ISSN: 2959-9938
Email: info@upubscience.com
Website: http://www.upubscience.com/

Table of Content

THE PROTECTION OF THE RIGHTS OF THE INNOCENT PARTY IN THE REVOCABLE MARRIAGE OF CONCEALING SERIOUS ILLNESS 1-6
WenJing Deng

THE CURRENT SITUATION, PROBLEMS AND PATHS OF NANCHANG IN CONSTRUCTING REGIONAL CONSUMPTION CENTER CITY 7-12
FangYan Li

THE PRACTICAL PATH OF DIGITAL TECHNOLOGY ENABLING THE HIGH-QUALITY DEVELOPMENT OF CULTURAL INDUSTRY IN JIANGXI PROVINCE 13-17
Ping Wu

THE GOVERNANCE PROCESS AND EVALUATION OF SCHOOL CHOICE IN CHINA'S COMPULSORY EDUCATION UNDER THE PERSPECTIVE OF EDUCATIONAL EQUITY 18-24
PengRun Chen

AI-EMPOWERED COLLEGE ENGLISH BLENDED TEACHING IN CHINA FROM THE PERSPECTIVE OF EDUCATIONAL ECOLOGY 25-28
Jun Su, LiShan Lv, ZhiYing Li*

HOW DOES THE BUSINESS ENVIRONMENT EMPOWER ENTREPRENEURSHIP? ——EVIDENCE FROM CHINESE PREFECTURE-LEVEL CITIES 29-41
Jiao Zhang, ZengXiong Yang*

INNOVATIVE TEACHING IN ENVIRONMENTAL DESIGN WITH A FOCUS ON "INTEGRATION OF THEORY AND PRACTICE, REALIZATION OF SITUATIONAL LEARNING" IN THE CONTEXT OF DIGITAL INFORMATIZATION 42-47
JunLing Zhou, ZiChuan Liu*, YiTong Guo, WeiRan Lin

EMPOWERING COLLEGE ENGLISH WRITING INSTRUCTION WITH CHATGPT: INTEGRATION OF TEACHER-AI-STUDENT FRAMEWORK AND POA 48-53
Li Li

THE MODELS AND PATHWAYS OF LEGAL KNOWLEDGE DISSEMINATION ON MOBILE SHORT VIDEO PLATFORMS 54-58
Cheng Yang

THE INTEGRATION OF "INDUSTRY-EDUCATION-RESEARCH-INNOVATION" IN THE TRAINING PATHWAYS FOR TRANSLATION TALENT IN AGRICULTURAL UNIVERSITIES IN THE AI ERA: A CASE STUDY OF THE MASTER'S PROGRAM IN TRANSLATION AT SOUTH CHINA AGRICULTURAL UNIVERSITY 59-66
Fei Deng*, FeiWu Li, Lv Lin, XiHua Chen

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3117

THE PROTECTION OF THE RIGHTS OF THE INNOCENT PARTY IN THE REVOCABLE MARRIAGE OF CONCEALING SERIOUS ILLNESS

WenJing Deng
School of Finance and Economics, Jiangxi University of Technology, Nanchang 330098, Jiangxi, China.
Corresponding Email: 1443767953@qq.com

Abstract: The 'Civil Code' deletes the medical prohibition of marriage in the ' Marriage Law ' instead of the major disease notification clause of the prospective spouse. The modification of this clause can better protect the parties ' marital autonomy. The parties can decide whether to marry the prospective spouse who has a serious illness according to their true intention. However, Article 1053 and Article 1054 of the Civil Code stipulate that the prospective spouse who has a serious illness before marriage registration has the obligation to inform truthfully. The scope of the serious illness and the obligation to inform the spouse of the sick party are controversial in practice. The right to know of the innocent party takes precedence over the privacy of the spouse of the sick party, and marriage involves the personal rights and property rights of citizens. Concealing the property and personality damage caused by major diseases to the innocent party, the innocent party has the right to claim damages. Marriage needs honesty. It advocates that the new people who are ready to enter the marriage respect each other and treat each other honestly. At the same time, it advocates the compulsory notification obligation of premarital examination.
Keywords: Concealing disease; Marriage revocation; The right of no-fault party; Premarital examination

1 OVERVIEW OF CONCEALING SERIOUS ILLNESS MARRIAGE REVOCABLE MARRIAGE

1.1 From Prohibition of Marriage to Voluntary Revocation

Article 7, paragraph 2, of the Marriage Law of the People 's Republic of China (hereinafter referred to as the " Marriage Law ") of the 2001 edition prohibits marriage : " Those who suffer from diseases that are medically considered not to be marriageable shall not marry. Starting from the legislative intent of the " prohibition of marriage " clause, first of all, it actively responds to the country 's eugenics policy, avoids the inheritance of diseases, improves the quality of the population, and protects social interests ; secondly, from the point of view of the independent consciousness of the marriage relationship, the mentally ill patients who do not have the ability of civil conduct do not have the independent consciousness and cannot meet the requirements of the ' completely voluntary ' in the legal marriage relationship. The marriage of patients with severe infectious diseases will also affect the right to physical health of the other party. Controlling disease marriage is conducive to protecting the interests of the other party. In a word, controlling disease marriage has its enthusiasm, but objectively this also limits the freedom of marriage of the parties to a certain extent. With the development of society and the emergence of new marriage and childbearing concepts, childbearing is no longer a necessary choice for marriage.China 's Constitution clearly stipulates : ' It is prohibited to destroy the freedom of marriage '. If the parties have a complete sense of autonomy and know that the prospective spouse has a major disease, they are still willing to enter into marriage. The law should also protect it and promote good faith marriage.
Article 1053 of the " Civil Code of the People 's Republic of China " (hereinafter referred to as the " Civil Code ") states : " If one party suffers from a serious disease, he shall truthfully inform the other party before the marriage registration ; if not truthfully informed, the other party may request the people 's court to revoke the marriage. This clause clearly stipulates that the spouse who has a serious illness has the obligation to inform the spouse truthfully before marriage registration. If the parties know and agree, they can enter into a marriage relationship, which replaces the medical prohibition of marriage in the marriage law. The disease clause replaces the major disease notification clause of the spouse, which can better protect the marriage autonomy of the parties, and the spouse who has a serious illness can enter the marriage and family to be taken care of, which is also conducive to reducing the social burden[1].And with the progress of medicine, the range of diseases that should not be married in medicine should be constantly changing, while the law itself is stable. Since the abolition of the compulsory pre-marital examination system, the prohibition clause has in fact been emptied. The change of the clause not only guarantees the party 's marital autonomy, but also encourages the principle of good faith marriage. If a party has a major disease and does not truthfully inform the no-fault party, the no-fault party can know or should know the reason for withdrawal within 1 year from the date of withdrawal. The marriage relationship is invalid from the beginning. It strengthens the obligation to inform before marriage and ensures the right of the innocent party to know the health status of the spouse before marriage, so as to make a more rational and independent marriage decision.

1.2 The Definition of No-Fault Party

Article 1054 of the Civil Code stipulates that if the marriage is invalid or revoked, the innocent party has the right to request damages. The word ' no-fault party ' is first proposed in the ' Civil Code ', and it is necessary to clarify the specific meaning of the word in the context of this article. According to the system explanation, the scene where the marriage is revoked is that the party who coerces into marriage and has a major illness does not truthfully inform the other party before the marriage registration. The no-fault party mentioned in this article refers specifically to the spouse who has a major illness, does not inform the other party before the marriage registration, and the concealed party is the no-fault party. The concealment of a major disease by one party may lead the innocent party to fall into a wrong understanding. Based on the wrong understanding, the choice of entering into a marriage relationship with the concealing party is not a true expression of intention, but a ' fraud ' in civil law [2]. We should advocate honest marriage and earnestly fulfill the obligation of truthfully informing.

2 PLIGHT OF APPLICATION OF CONCEALING SERIOUS ILLNESS REVOCABLE MARRIAGE

2.1 Identification of ' Truthful Disclosure '

Article 1053 of the Civil Code stipulates that if it is not truthfully informed, the other party may request the people 's court to revoke the marriage. The identification of ' not truthfully inform ' can be divided into two categories : first, ' intentionally not inform ', completely not informing the other party of illness before marriage registration. The second ' not truthfully inform ' informs A disease before marriage registration, which is actually B disease, or informs a mild disease, which is actually a serious disease, that is, the situation of informing is inconsistent with the actual situation of illness [3]. Fuzzy notification does not constitute a legal 'truthful notification ', which will lead the other party to fall into a wrong understanding and choose to enter into a marriage relationship based on the wrong understanding. In judicial practice, the plaintiff sued the defendant to revoke the marriage. He believed that although the plaintiff and his family had informed the fact of illness before marriage (they had delivered drugs and disability certificates to the plaintiff before marriage registration), they concealed the development trend and possible aggravation of the disease, which led to the onset of mental illness after marriage and even threatened the personal safety of others.The court of first instance found that the defendant 's behavior belonged to ' failure to truthfully fulfill the pre-marital notification obligation ', and the plaintiff had the right to revoke the marriage. Although the court of second instance revoked the original judgment, it also recognized the fact determined by the court of first instance. The reason for its revocation is that the plaintiff filed a lawsuit with the people 's court to revoke the marriage relationship on the grounds that the defendant concealed his serious mental illness before marriage. The time has exceeded the exclusion period stipulated by law [4].

It is necessary to consider the parties ' cognition of the disease behind the determination of " truthfully inform, " which is affected by the parties ' cognition of their current physical condition, the expectation of future physical condition, and the level of medical technology. For example, there is a major disease before marriage. Although it has been treated well, there is still the possibility of recurrence, or there is no disease before marriage, but the family has a genetic history and may appear in the future. If major illness is only a possibility, it involves the privacy right of the sick party and the right to know of the other party. Although the privacy right of the sick party takes precedence over the right to know of the other party in the revocable clause of concealing major illness, when the major illness is in an ' undetermined ' state, the court should consider the overall situation of the case.

2.2 Identification of ' Major Disease '

The current ' Civil Code ' does not clearly stipulate the specific scope of major diseases, and there is a large room for discretion in judicial practice. In practice, the " Maternal and Child Health Law of the People 's Republic of China " (hereinafter referred to as the " Maternal and Child Law ") is generally applied. Article 8, Article 9 and Article 38 (3) of the " Maternal and Child Law " stipulate that AIDS, gonorrhea, syphilis, leprosy, and other infectious diseases that are medically considered to affect marriage and fertility are suspended during the period of infection or during the period of onset of mental illness. These provisions are defined for the diseases that should not be married in the previously implemented ' Marriage Law ', and are not equal to the scope of major diseases that both men and women should truthfully inform before marriage in the current ' Civil Code '. The disease of ' reprieve marriage ' belongs to the identification of doctors according to their professional skills, and the description of ' major diseases ' belongs to the identification of legal value. With the development of medical technology, the general public 's cognition of ' major diseases ' is also different. The separation of marriage and fertility functions, as well as the emergence of ' DINK ' groups, ' major diseases ' are not necessarily ' significant ', nor do they necessarily affect ' marriage '.

3 CLARIFICATION OF THE RIGHT TO KNOW SERIOUS ILLNESS OF THE INNOCENT PARTY IN THE REVOCABLE MARRIAGE OF CONCEALING SERIOUS ILLNESS

3.1 The Derogation of the Personality Right of the Innocent Party

Based on the legal status of equal subjects, both natural persons enjoy an independent personality and are ready to enter into a marriage relationship. Then, before registering for marriage, the principle of good faith should be respected, and the concealment and deception of the parties should be prohibited. The voluntary principle of the other party should be

respected, and equal consultation should be entered into the marriage relationship. The autonomy of marriage is included in Article 110 of the Civil Code, which belongs to the scope of specific personality rights. In line with the purpose of family civilization and harmony, based on the duty of loyalty of husband and wife, the no-fault party has the right to know whether the prospective spouse has a major disease before marriage registration. If the prospective spouse has a major disease and does not inform the no-fault party, the no-fault party falls into a wrong understanding and chooses to enter into a marriage relationship with it. It is ' deception ', which is to bury thunder in the marriage relationship and affect the trust between husband and wife. It is a respect for the independent personality of the non-fault party to truthfully inform the other party of their illness before marriage, otherwise it will harm the personality right of the non-fault party.

3.2 No-Fault Party Suffered Mental Damage

We should respect the natural person 's marriage autonomy, based on the equal legal status of both sides, before marriage to understand each other 's physical health is in line with human nature. If the prospective spouse knows that the other party has a major disease, if he or she is still willing to enter into a marriage relationship, this is also supported by the Marriage and Family Code of the Civil Code.This kind of marriage has legal effect, which is also advocated and recognized by the contemporary mainstream moral concept, and belongs to the scope of the marriage autonomy of the parties. However, if it is malicious to conceal their own health status to ' deceive ' the innocent party into the marriage relationship, it will affect the marriage autonomy of the innocent party. According to the mainstream values of society, when choosing a spouse, they often consider the other party 's family, appearance, economy, health and so on. There is no doubt that the health status is an important consideration for choosing the marriage object. The innocent party makes a choice without knowing it, which naturally damages its marriage autonomy and is not a true expression of intention. At the same time, according to the general concept of society, the best time to enter into marriage is limited. Concealing major diseases before marriage and entering into an unsuitable marriage and then divorce will affect the possibility of the innocent party to find another suitable remarriage spouse. It is called " second marriage " At a disadvantage in the marriage market.

3.3 The Right to Health of the Innocent Party is in Danger of Being Damaged

The right to health is a very important right for natural persons, and having health is the basis for enjoying other rights. If the major disease of the prospective spouse in the marriage is contagious, it is a danger to the right to health of the non-fault party. The non-fault party naturally has the right to know, and protects his right to health by exercising his right to know. The rank of the right to health is higher than the privacy of the spouse of the sick party. The author believes that suffering from major infectious diseases (such as AIDS, syphilis, etc.) and maliciously concealing, and then entering the marriage relationship with the innocent party, can even be considered as intentional injury.

3.4 No-Fault Party 's Property is in Danger of Loss

Husband and wife have the obligation to support each other and share risks and responsibilities. Article 1059 of the Civil Code stipulates that husband and wife have the obligation to support each other. The party in need of maintenance has the right to ask the other party to pay maintenance when the other party fails to perform the maintenance obligation. If one of the spouses suffers from a serious illness resulting in incapacity to work or basic self-care ability, this means that the spouse will bear the obligation to pay maintenance, medical expenses and take care of the other 's daily life.Therefore, if the prospective spouse is already suffering from a major disease before marriage, it should be informed of the other party before the marriage registration, if maliciously concealing the fact of illness will lead to the no-fault party unilaterally assuming the maintenance obligation, rather than the couple helping each other. Similarly, if the major disease is hereditary and affects the physical health of future generations, based on the obligation of parents to raise minor children, the responsibility of the non-fault party will be aggravated compared to ordinary people, and there is also the risk of property loss.

4 CONCEALING THE SPECIFIC RIGHTS AND INTERESTS OF THE INNOCENT PARTY IN A SERIOUS ILLNESS REVOCABLE MARRIAGE

One of the prospective spouses has the legal obligation to truthfully inform the major disease but refuses to perform it. The non-faulty party has the right to request the fault party to compensate for the damage while enjoying the right to revoke the marriage claim. This is a new right created by the ' Civil Code '. The claim is based on the infringement of the fault party, which infringes the personal dignity, health right and freedom of marriage of the non-fault party. The fault party should bear the tort liability, ' all acts of damage to others due to fault should bear the liability for compensation '. The divorce damage compensation system includes the failure of the expectation of marriage without fault [5]. From the perspective of the overall purpose and function of the law, in addition to the revocation of marriage, the scope of damages should also include material damage and mental damage.

4.1 The No-Fault party has the Right to Request the Fault Party to Compensate for Material Damage

The material damage suffered by the innocent party is not only the loss of property, but also the loss of personal and health rights. According to Article 1054 of the Civil Code, an invalid or revoked marriage is not legally binding from the beginning, and the parties do not have the rights and obligations of the husband and wife. The property obtained during cohabitation shall be handled by agreement of the parties ; if the agreement fails, the people 's court shall make a judgment according to the principle of taking care of the innocent party. The property treatment of invalid marriage caused by bigamy shall not infringe the property rights and interests of the parties to legal marriage. The provisions of this law on parents and children shall apply to the children born by the parties. If the marriage is invalid or revoked, the innocent party has the right to request damages. First of all, when the common property of marriage is divided, the people 's court decides according to the principle of taking care of the innocent party, and the innocent party should be given more consideration and protection. Some bride price, wedding ceremony, dowry and other expenses paid by the faultless party for marriage can also request compensation from the fault party, but the amount of compensation should be negotiated friendly between the two parties first, and appropriate compensation should be paid. If the negotiation fails, the court should not support the full return. After all, the previous marriage investment has an emotional and financial payment [6].Secondly, the personal injury, you can refer to the ' Supreme People 's Court on the trial of personal injury compensation cases to explain a number of issues of applicable law ' no-fault party if the spouse infected with the disease, the no-fault party 's medical expenses, transportation costs, care costs, post-nutrition costs, lost wages and other reasonable expenses, have the right to request the infringer to assume full property liability. Finally, the economic help of divorce, for the no-fault party 's expectation of marriage, the social evaluation after divorce is reduced. If the no-fault party loses his job due to infectious diseases, the court should also give appropriate material compensation to the fault spouse in the case of sentencing, so as to avoid the no-fault party falling into the difficulty of getting sick and losing his job income.

4.2 The No-Fault Party has the Right to Request the Fault Party to Compensate for Mental Damage

The marriage relationship involves personal and property. Naturally concealing major diseases before marriage is a major injury to the feelings of the innocent party. You can refer to the ' Interpretation of Liability for Mental Damage ', but the interpretation only lists : death compensation, disability compensation, and other mental comfort payments. Most of the judicial practice involves other mental comfort money. Of course, if there is a death or major disease caused by infection, it should naturally support the claim for damages of the innocent party.The damage suffered by the innocent party : first of all, it is emotional damage, mental loss, one party 's malicious concealment of major diseases before marriage makes the innocent party choose to enter the marriage based on wrong understanding. Naturally, it brings mental pain to the no-fault party, which is detrimental to mental health. Secondly, the right of reputation has been damaged. Although the law stipulates that marriage is annulled without legal marriage facts, in the marriage market and the concept of mass society, the faultless party is " second marriage. " In particular, the discrimination against women should be recognized by the public, and it is difficult to have the marriage status of " first marriage. " Finally, it is the infringement of the marriage autonomy of the innocent party. The life is limited. The innocent party has experienced a bad marriage and has also lost the opportunity cost of finding a good marriage. It is possible for the innocent party to find a more suitable spouse, and based on the other party 's concealment of major diseases, a misjudgment has been made, which is the damage to the innocent party 's youth life and the infringement of marriage autonomy. The court should support the claim for compensation for mental damage of the innocent party based on the specific circumstances of the case.

4.3 The Innocent Party has the Right to Request the Annulment of Marriage

The innocent party has the right to choose marriage, and the protection of the innocent party 's right to revoke marriage reflects the protection of the parties ' freedom of marriage. It can be understood that the no-fault party is based on the wrong understanding and enters the marriage state with the other party and causes great damage to the person and property of the no-fault party. The law stipulates that civil acts made by the parties based on major misunderstandings can be revoked, so the right to revoke the marriage of the non-faulting party should be given, and the ' Civil Code ' should be revised to include sick marriage as a type of revocable marriage. The quasi-spouse has the right to know whether the other party has a major disease before marriage, and the quasi-spouse has a major disease notification obligation before marriage. If the obligation is violated, the marriage can apply for revocation. It is a great progress in respecting human rights. In fact, major diseases, as a situation of revocable marriage, do not lead to the invalidity of marriage. If the innocent party voluntarily maintains the marriage registration relationship, the effectiveness of marriage can also be maintained, and the law will naturally not interfere.

5 JUDICIAL SUGGESTIONS ON THE PROTECTION OF THE RIGHTS OF THE INNOCENT PARTY IN THE REVOCABLE MARRIAGE OF CONCEALING SERIOUS ILLNESS

5.1 The Clear Burden of Proof of " Truthfully Inform "

In judicial practice, the identification of truthful notification is more difficult, generally only oral communication before marriage. In view of the fact that " truthfully informing the disease " before marriage registration is the " Civil Code " that requires the sick spouse to fulfill the obligation of equal notification while ensuring that the sick spouse enjoys the

right to conclude marriage. The condition of illness belongs to the privacy of the parties and is generally not known to outsiders. Before the marriage registration, the performance of this obligation should be borne by the spouse of the sick party, who should take the initiative to prove that it has been truthfully informed. The no-fault party should prove that the fault party had suffered from a major disease before marriage rather than during marriage. The burden of proof in such cases should be allocated as follows : the subject of the innocent party bears the burden of proof for ' the spouse has a serious illness before marriage ', and the spouse of the sick party bears the burden of proof for 'having fulfilled the obligation of truthfully informing' [7].

5.2 Definition of the Scope of ' Major Diseases '

The determination of ' major disease ' in the revocable clause of concealing major disease should be considered from the perspective that according to the general concept of society, as long as the party knows that the other party has such a major disease before marriage, it will not choose to enter into a marriage relationship with it. The major diseases referred to in Article 1053 of the Civil Code generally need to be considered from three aspects. First, the diseases that affect sexual life, fertility and spouse 's health are diseases of sexual dysfunction, genetic diseases and infectious diseases, such as genetic diseases, syphilis, AIDS and so on. Secondly, mental illnesses that affect emotional communication, such as severe intellectual problems, schizophrenia, manic depression, etc., will affect marital status and affect the daily life of couples. Finally, the impact of family production and life, the need for huge medical expenses, the treatment of long-term diseases, such as leukemia, malignant tumors, etc., will bring a burden to the family economy. The list of the above diseases is not comprehensive. It may be due to the different concepts of marriage and childbearing, the different economic ability of the family and the different identification in the judicial practice. At the same time, we can refer to the identification of major diseases in the insurance industry : for example, the ' Specification for the use of disease definitions for major disease insurance ' promulgated by the Insurance Association.

5.3 Perfecting the Compulsory Notification Obligation of Premarital Examination

Although the compulsory premarital examination system has been abolished, premarital examination is no longer a prerequisite for the conclusion of marriage, but based on the principle of encouraging good faith marriage, the administrative legislation should establish a pre-marital health examination system suitable for the national conditions to protect the parties ' right to know [8]. Compulsory notification system of voluntary premarital health examination should be established. It is advocated to sign the informed consent of both parties to the health status of the other party before the marriage registration, so as to protect the right to know of both parties. If the subsequent request to revoke the marriage for concealing a major disease occurs, it is also conducive to the proof of the no-fault party.

6 CONCLUSION

The establishment of the revocable marriage system in the ' Civil Code ' guarantees the parties ' marital autonomy to a greater extent, promotes the principle of marital integrity, and the right to know of the non-faulting party takes precedence over the privacy of the spouse of the sick party. Marriage requires the good faith of both parties. The party with major illness conceals before marriage, which will cause the non-faulting party to fall into a wrong understanding and infringe on the non-faulting party 's personality rights, marital autonomy, physical health rights and property rights, and should bear tort liability. The innocent party can apply for the revocation of the marriage relationship and request the sick party to bear the liability for material damage and mental damage. In order to better protect the parties ' right to know, we should improve the compulsory notification obligation of premarital examination, clarify the division of burden of proof in judicial practice, and consider the scope of major diseases according to other laws and regulations.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

[1] Hao Jingjing. The protection and limitation of the 'Civil Code' on the marriage rights of vulnerable groups-taking the revision of the validity of disease marriage as the starting point. Guangxi Social Sciences, 2021, 10: 29.
[2] the Leading Group on the Implementation of the Civil Code of the Supreme People 's Court. Comprehension and Application of the Marriage and Family Part of the Civil Code of the People 's Republic of China. Beijing : People 's Court Press, 2020: 101.
[3] Ren Jiang, Shao Yangqi. Interpretation of concealing the right to revoke marriage for major diseases. Journal of Wenzhou University, 2022, 35(4): 16.
[4] the Civil Judgment of Fuyang Intermediate People 's Court of Anhui Province, 2023: 3647. Wan 12 Minzhi.
[5] Tian Shaohua, Shi Yanchun. Difficult Problems in the Application of Law in the Civil Code Divorce Damage Compensation System. Hebei Law, 2021: 81.
[6] Jiang Yue. Obligation of Quasi-spouses to Inform of Serious Illness and the Right of No-fault Party to Revoke Marriage and Claim for Compensation. Research on the Rule of Law, 2020, 4: 78.

[7] Hao Jingjing. The protection and limitation of the 'Civil Code' on the marriage rights of vulnerable groups - Taking the revision of the validity of disease marriage as the starting point. Guangxi Social Sciences, 2021, 10.
[8] Li Li. On the Legal Control of Illness Marriage. Journal of Henan Provincial College of Political and Legal Administrators, 2011, 2: 176.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3118

THE CURRENT SITUATION, PROBLEMS AND PATHS OF NANCHANG IN CONSTRUCTING REGIONAL CONSUMPTION CENTER CITY

FangYan Li
Jiangxi Regional Development Research Institute, Jiangxi University of Technology, Nanchang 330098, Jiangxi, China.
Corresponding Email: fangyanli0706@163.com

Abstract: Consumption is the first driving force for economic growth, and the construction of consumption center is an important way to promote regional economic development. In Jiangxi Province's regional development strategy layout of "one master, one pair, two poles and multiple points, whole region coordination", Nanchang, a Chinese city,as the core of "one master", shoulders the key mission of leading and promoting "Chang-Jiu integration" and surrounding urban agglomeration to high-quality development. Nanchang has the conditions and responsibility to build into a regional consumption center city. Nanchang has basically met the basic conditions to build a regional consumption center, but there are some problems such as insufficient consumer brand influence, consumption environment to be optimized, insufficient innovation of consumption formats, and insufficient regional collaborative development. In view of this, it is necessary to gradually overcome the existing problems by improving the city's brand and consumption attraction, optimizing the consumption environment, innovating the consumption formats and expanding the radiation scope of the consumption market, so as to achieve the successful construction of regional consumption center city and promote the rapid development of regional economy.
Keywords: Nanchang; Consumption center; Regional consumption center city; Consumer market; Brand cultivation

1 INTRODUCTION

Against the backdrop of the slowdown in global economic growth and the transformation and development of the domestic economy, consumption, as one of the "three carriages" driving economic growth,is playing a more important role in economic development, and its fundamental role in economic growth is increasingly prominent[1]. As an important node of the consumption market, the strengthening of the functions of cities has an important impact on regional economic growth, national domestic demand growth and social stability[2].Consumption center cities, as a new trend of urban development,have become a significant engine to promote regional economic growth,which possess both strong consumption capabilities and extensive radiation influence, effectively attracting consumers from surrounding areas and lead and promote regional economic development[3-4].

As the capital city of Jiangxi Province in China, Nanchang is the political, economic and cultural center of Jiangxi Province, with unique location advantages and rich resources. With the continuous and rapid economic development, the population scale continues to expand, and the urban infrastructure is increasingly perfect, it has a good foundation to build a regional consumption center city. Building Nanchang into a regional consumption center city is conducive to promoting regional economic development, enhancing urban competitiveness and promoting industrial upgrading.

2 THE SIGNIFICANCE OF CONSTRUCTING NANCHANG INTO A REGIONAL CONSUMPTION CENTER CITY

2.1 Promoting Regional Economic Development

Consumption is one of the important driving forces of economic growth. Building a regional consumption center city can attract a large number of consumers and investors, drive the economic development of surrounding areas, and form a growth pole of regional economy. Building a regional consumption center city in Nanchang can attract a large number of local residents, consumers in surrounding cities and non-local tourists to come to spend, directly drive the prosperity and development of retail, catering, accommodation, entertainment and many other consumption-related industries, increase the income and tax revenue of enterprises, promote the creation of jobs, and thus play a significant role in driving the economic growth of the city and even the whole province. For example, the operation of large-scale commercial complexes, the construction of characteristic commercial streets and the holding of various consumption festival activities will attract a large amount of capital inflow and stimulate the activity of the consumer market.

2.2 Improving Urban Competitiveness

By building a regional consumption center city, Nanchang can further enhance the city's image and popularity, enhance the city's attractiveness and competitiveness, and lay a solid foundation for the city's long-term development. Rich consumption resources, unique consumption culture, convenient consumption environment and various large-scale consumption activities will become the city name card of Nanchang, attracting more business negotiations, tourism,

cultural exchanges and other activities, further enhancing the comprehensive image and reputation of the city, and enhancing the attraction to talent, capital and other factor resources. For example, Paris, Hong Kong and other internationally renowned consumption centers have become the focus of global attention by virtue of their excellent consumption charm, attracting consumers from all over the world, and gathering a large number of business resources and innovation elements. Shanghai, Guangzhou and other well-known domestic consumption center cities are also in the same situation, in attracting talent and capital and other factors of resource performance.

2.3 Promoting Industrial Upgrading

The construction of a regional consumption center city will promote the industrial upgrading and structures adjustment of Nanchang, promote the development of modern service industry and high-tech industry, and improve the industrial level and added value of the city. On the one hand, the upgrading of consumer demand will guide the local manufacturing, service and other industries to increase R&D investment, improve the quality of products and services, and promote the development of traditional industries to high-end, intelligent and green direction. For example, in order to meet consumers' demand for high-quality clothing, local apparel enterprises will strengthen design innovation, adopt advanced production technology and environmentally friendly fabrics; On the other hand, the agglomeration effect of consumption center cities will attract more well-known domestic and foreign brands and high-end commercial enterprises to settle in, bring advanced management experience and business models, promote the innovation and diversified development of local commercial forms, and give rise to new industries, such as fashion creative industry and experiential consumer service industry.

3 THE CURRENT SITUATION OF NANCHANG IN BUILDING A REGIONAL CONSUMER CENTER CITY

3.1 Steady Improvement in Economic Growth

As the capital city of Jiangxi Province, Nanchang has continuously enhanced its economic strength, sustained economic growth, continuous optimization of industrial structures, and continuous increase of the proportion of service industries, which provides a solid economic foundation for building a regional consumption center city. In 2022, the regional GDP of Nanchang exceeded 700 billion yuan, reaching 720.350 billion yuan, with a year-on-year growth of 4.1%. It ranked 14th among the provincial capitals in China, one place ahead of the previous year, and achieved catch-up for two consecutive years. Among the provincial capitals in central China, Nanchang ranked second, second only to Taiyuan. Among them, the added value of the primary industry was 24.860 billion yuan, the added value of the secondary industry was 348.461 billion yuan, and the added value of the tertiary industry was 347.029 billion yuan, achieving a year-on-year growth of 3.6%, 4.6% and 3.7% respectively. The structures of the city's three industries has changed, and it will be adjusted to 3.4:48.4:48.2 in 2022. The proportion of the primary industry decreases and the proportion is low, while the proportion of the secondary industry and the tertiary industry increases, both contributing more than 48% to economic growth.

3.2 Expansion of Consumption Market Scale

The per capita disposable income of urban and rural residents in Nanchang has been increasing year by year, the gap between urban and rural areas has been narrowing, and the level of residents' consumption power has been increasing year by year. The increase of residents' income level and the change of consumption concept have promoted the increasing prosperity of the consumer market in Nanchang. In 2022, the per capita disposable income of all residents in Nanchang will reach 44,422 yuan, an increase of 4.8% over the previous year. The per capita disposable income of urban residents reached 52,622 yuan, an increase of 4.3 percent. The per capita disposable income of rural residents reached 24,218 yuan, up 5.7 percent. The urban-rural income gap narrowed, with the income ratio between urban and rural residents adjusted to 2.17 to 1, 0.03 points lower than the previous year. In the same year, the per capita living consumption expenditure of urban residents was 32,515 yuan, an increase of 4.8%. The per capita living consumption expenditure of rural residents was 17,706 yuan, up 6.8[5] percent. In 2022, the total retail sales of consumer goods in Nanchang exceeded 300 billion yuan for the first time, reaching 301.2 billion yuan, an increase of 4.6% over the previous year. The growth rate ranked second among provincial capitals in China and first among central provincial capitals, realizing the expansion and quality[6] of the consumer market. In addition, in 2022, Nanchang's retail sales above quota reached 104.301 billion yuan, accounting for 36.1% of the province, with a growth rate as high as 10.9%, 8.3% higher than the national average.

3.3 Gradual Optimization of Consumption Structure

The consumption structures of Nanchang residents is undergoing profound changes. The proportion of food expenditure in the total household consumption expenditure has gradually decreased. In 2022, the Engel coefficient of urban households has dropped to 29.4%, lower than the national level; The Engel's coefficient of rural households is 31.4%, indicating that while meeting basic living needs, residents are investing more in development-oriented and enjoy-oriented consumption. In terms of education, culture and entertainment, residents' consumption demand for

various training courses, cultural performances, film and entertainment is increasingly strong. In 2022, the consumption expenditure of Nanchang residents in the field of education will increase by 12% year on year, the box office revenue of cultural performances will increase by 20%, and the consumption of film and entertainment will increase by 15%. In the field of healthcare, residents' consumer spending on health examination, fitness services, high-end medical products and services continues to increase. In 2022, the scale of Nanchang health examination market will expand by nearly 25%, the quantity/Qty of health club members will increase by 18%, and the sales of high-end medical products and services will increase by 30%. In terms of transportation and communication, the upgrading of automobile consumption in Nanchang is accelerating, and the updating frequency of communication products such as smart phones is also high. In 2022, the sales volume of new cars in Nanchang increased by 10% year on year, among which the sales volume of new energy vehicles increased by nearly 50%, and the sales proportion of high-end mobile phones increased by 20%. In addition, emerging consumption models such as shared travel and mobile Internet services have also been widely applied, and the number of shared bike rides in Nanchang in 2022 increased by 25% year-on-year, and the quantity/Qty of mobile Internet users increased by 30%.

3.4 Gradual Optimization of Consumption Structure

Nanchang has made remarkable achievements in the construction of commercial infrastructure, and its commercial carriers are increasingly diversified. A number of core commercial centers have been formed in the city, such as Bayi Square business District and Honggutan Wanda Square Business District, which gather a variety of commercial forms such as large shopping centers, department stores, supermarkets, specialty stores, catering and entertainment venues, to meet the diversified needs of consumers at different levels. The annual sales of Bayi Square business district and Honggutan Wanda Plaza business district exceed 10 billion yuan and billions of yuan respectively. At the same time, characteristic commercial streets are also thriving, such as Shengjinta Food Street, Toadstreet Night Market, Zijin Night Market, etc. The former attracts countless diners with its long historical background and rich Gan cuisine, while the latter two become popular punch times with their affordable prices, diverse commodities and lively atmosphere, and the passenger flow can reach tens of thousands of people every night. In addition, the construction of urban complexes is also accelerating, integrating shopping, dining, entertainment, office, residence and other functions in one, such as the Nanchang Greenland Central Square in Honggutan District, providing consumers with one-stop consumption experience.

4 THE PROBLEMS EXISTING IN THE CONSTRUCTION OF REGIONAL CONSUMPTION CENTER IN NANCHANG AND THE REASONS

4.1 Insufficient Influence Of Consumer Brands

Nanchang has obvious shortcomings in the construction of well-known consumer brands, and the number of local high-quality brands is limited, and the lack of international and domestic influence. [5]At present, well-known local brands such as "Wang's Honey" and "Ganyuan Food" occupy a certain market share, but have not yet formed a wide range of influence. The reason is that the economic aggregate and per capita income level of Nanchang are relatively backward among the provincial capitals in the central region. In 2022, the GDP of Nanchang ranks fifth, and the first four provinces and cities have exceeded one trillion yuan, while Nanchang only exceeded 700 billion yuan, with a large gap. The profitability of enterprises is limited, and it is difficult to invest a lot of money in brand building and innovation research and development, resulting in the lack of competitiveness of local brands. The per capita disposable income of Nanchang is lower than that of Changsha, Wuhan and Hefei. The relatively low income level of residents leads to the limited consumption power of high-end consumer products and services, which affects the development of high-end consumer market. As a result, Nanchang has a big gap in attracting high-end consumer groups and leading fashion trends. The market share of high-end consumption in Nanchang is relatively small. Obviously, it is not conducive to the construction of city brand. It has disadvantages in attracting consumers, investors and tourists, and it is difficult to attract consumers from distant cities to come to spend.

4.2 The Consumption Environment Needs to be Optimized

Uneven distribution of commercial facilities and poor transportation convenience affect consumers' consumption experience. The economic development level of Nanchang is relatively low and the urban planning is not perfect enough, so the integration and investment of commercial resources are insufficient, the distribution of commercial network in some areas is unbalanced, the commercial facilities in the old city are relatively old and crowded, and the commercial supporting facilities in the new city are not perfect. At the same time, the investment in urban transportation infrastructure construction is relatively insufficient, the traffic planning and management around the commercial center are lack, and the traffic congestion phenomenon is serious. Taking Bayi Square business Circle as an example, the traffic flow in the evening peak hours on weekdays can reach 12,000 vehicles per hour, but the road capacity can only accommodate 8000 vehicles, the congestion index is as high as 1.5, the traffic congestion situation is extremely serious. At the same time, the public transport transfer hub is set unreasonable, the passenger transfer walking distance is long, and the bus line connection is not close enough, and the average transfer time of important transfer stations such as Nanchang Railway Station is as long as 15 minutes. It greatly reduces the convenience and enthusiasm of consumers to

go to the business center, and has a serious negative impact on the shopping experience. In addition, the service awareness and service level of some commercial enterprises need to be improved, the quality of consumer service needs to be improved, there are problems such as inadequate after-sales service, and the dispose of consumer complaints is not timely, which is not conducive to the improvement of Nanchang's commercial service level and the shaping and upgrading of the city's commercial image.

4.3 Insufficient Innovation of Consumption Business Forms

The consumption structures in Nanchang is dominated by traditional retail, catering and entertainment, while emerging consumption forms such as smart retail and digital consumption account for a relatively low proportion, due to the lack of talent and scientific and technological resources. In terms of talent supply, the construction of a regional consumption center city is in urgent need of multi-professional talents, including talents in the fields of business operation management, marketing and fashion creativity, etc. However, Nanchang has only one 211 university, Nanchang University. Compared with Wuhan, Changsha and other central provincial capitals, the quantity of universities is small and the comprehensive strength of disciplines is relatively weak. In terms of the introduction of high-end talents, the lack of high-quality jobs and supporting policies for talents leads to the lack of talent attraction and the serious brain drain phenomenon. In 2022, the turnover rate of commercial operation and management talents in Nanchang city reached 15%, and the turnover rate of marketing talents was as high as 12%. The shortage of talents makes enterprises lack of core intellectual support in innovating business models, building consumer brands and improving service quality, which makes it difficult to promote the innovation and development of consumption formats. In addition, Nanchang's scientific and technological innovation resources are relatively scarce, and the quantity of scientific research institutions is small. The quantity of professional scientific research institutions is about 3 per million people, far lower than the 10 in Hefei. Investment in scientific research is also insufficient, accounting for only 1.5% of the city's GDP in 2022, compared with 3.6% in Hangzhou during the same period. The integration applied of emerging technologies such as big data and artificial intelligence with the field of consumption is relatively lagging behind, which limits the development of emerging consumption formats such as smart consumption and digital consumption.

4.4 Lack of Coordinated Regional Development

The insufficient cooperation between Nanchang and surrounding cities in regional collaborative development restricts the further expansion of the consumer market. In terms of consumer market expansion, it has not fully tapped and integrated the consumption resources and market advantages of the surrounding cities, and has not yet established an effective regional consumption cooperation mechanism. Take tourism consumption as an example. According to the statistics of tourism department displayed, the integration degree of tourist routes between Nanchang and surrounding cities such as Jiujiang and Jingdezhen is only about 30%, which is far lower than the integration level of more than 70% among cities in the Yangtze River Delta region. The sharing degree of tourism resources is also low, and only about 20% of the scenic spots carry out joint promotion activities with the surrounding cities, which fails to form the synergistic effect of regional tourism consumption. In addition, there are also deficiencies in transportation infrastructure interconnection and commercial policy coordination, which limit the expansion of the range of Nanchang's consumer market radiation and the play of the function of the regional consumption center city.

5 THE DEVELOPMENT PATH OF NANCHANG TO CONSTRUCT A REGIONAL CONSUMPTION CENTER CITY

5.1 Enhancing the City's Brand and Consumption Attractiveness

First, we should explore the cultural connotation of cities and build distinctive brand images. In-depth excavation of Nanchang's historical and cultural heritage, such as the August 1st spirit, Yuzhang culture, etc., the cultural elements into the city construction, commercial activities and tourism product development, and the use of Tengwang Pavilion and other core elements design of the city logo, applied in urban public facilities, tourist souvenirs, commercial advertising and other fields, improve cultural identification and brand influence. Second, strengthen urban marketing and promotion to enhance the visibility of the city. Formulate a comprehensive marketing strategy, integrate online and offline resources, publicize the city image and promote tourism through online social media, tourism websites, short video platforms, etc., and produce content such as high-quality city propaganda videos and tourism guides to attract domestic and foreign tourists; Actively participate in domestic and foreign tourism exhibitions, business fairs, cultural exchange activities, etc., and hold Nanchang characteristic commodity exhibitions, cultural and art exhibitions, etc., to show the charm and consumption characteristics of the city. At the same time, we will deepen cooperation with well-known tourism organizations and business media to enhance our popularity and reputation in the consumer market. Third, we will cultivate and introduce well-known consumer brands to improve the level of consumption. Strengthen the cultivation of local consumer brands, encourage innovation and improve quality, support local brands to participate in well-known exhibitions and fashion events at home and abroad, and actively introduce international and domestic first-line brands to optimize the structures of commercial brands. pass preferential policies and improving commercial facilities, attract high-end brands to open flagship stores and specialty stores, create high-end consumer gathering areas, meet diversified consumer demand, and enhance the overall grade and attractiveness of Nanchang consumer market.

5.2 Optimizing the Consumption Environment

First, we will improve the distribution of commercial facilities and balance regional development. According to urban planning and population distribution, we should scientifically distribute commercial facilities, renovate and upgrade commercial facilities in old urban areas, accelerate the construction of supporting commercial facilities in new urban areas, and build a number of modern commercial complexes integrating shopping, leisure and entertainment. At the same time, we should pay attention to the development of urban edges areas and community commerce, build community business centers and convenient supermarkets, facilitate residents' daily consumption, and achieve balanced and full coverage of commercial facilities. The second is to improve traffic conditions, improve travel convenience. We will increase investment in urban transport infrastructure, optimize the layout of urban road networks, strengthen traffic planning and management in commercial centers, add more parking lots, promote intelligent parking, optimize public transport lines and service quality, increase the number of public transport vehicles, realize seamless connection between public transport and rail transit, and ease the difficulty of parking and hitchhike. At the same time, we will actively develop emerging transportation modes such as shared travel and intelligent transportation, provide diversified travel options, and improve travel convenience and comfort. Third, we will strengthen regulation of the consumer market and improve service quality. We will establish and improve the consumer market supervision system, strengthen supervision, strictly regulate market order, crack down on fake and shoddy goods, price fraud, false advertising and other illegal acts, and safeguard the legitimate rights and interests of consumers. Strengthen the supervision and management of commercial service quality, establish a complaint dispose mechanism, and timely dispose complaints; Carry out training and demonstration activities to enhance commercial service quality, disseminate excellent service experiences, and promote an overall improvement in the industry's service quality[7].

5.3 Creating New Forms of Consumption

First, we will promote the transformation and upgrading of traditional forms of consumption. Encourage traditional retail, catering, entertainment and other enterprises to use the Internet, big data, artificial intelligence and other new technologies to transform and upgrade, traditional retail enterprises can develop online and offline integration of new retail models, pass construction of e-commerce platforms, carry out live delivery, precision marketing and other ways to expand sales channels;Traditional catering enterprises can introduce intelligent food ordering and delivery platforms to optimize the dining process;Traditional entertainment enterprises can combine virtual reality (VR), augmented reality (AR) and other technologies to create immersive entertainment experience and increase the interest and attraction of consumption. Second, we need to foster new forms of consumption and lead new consumption trends. We will actively foster new forms of consumption, such as smart consumption, green consumption, shared consumption and experiential consumption. In terms of smart consumption, accelerate the construction of 5G and Internet of Things infrastructure, support the research and development and sales of smart consumer products such as smart wearable devices and smart homes, and create smart consumption scenarios[8]. In terms of green consumption, encourage the production and sales of green environmental protection products, develop green catering, tourism and other green consumer industries, and build green consumption demonstration bases[9]; In terms of shared consumption, we should standardize the forms of shared economy and encourage the innovation and applied of shared consumption models such as shared travel, accommodation and office. In terms of experiential consumption, we will develop cultural, agricultural, industrial and other themed experiential consumption projects to meet individual needs. Third, we will promote the deep integration of consumption with science and technology. Encourage enterprises to cooperate with scientific research institutions to carry out consumer technology R&D and innovation projects, such as consumer behavior research and precision marketing based on big data analyzed, applied of artificial intelligence in customer service and business operation management, applied of blockchain technology in commodity traceability and consumer credit system construction, etc., establish a scientific and technological achievements transformation platform to accelerate the transformation applied of science and technology in the consumer field. And improve the technological content and innovation vitality of the consumer market.

5.4 Expanding the Consumer Market Range

First, we will strengthen coordination and cooperation on consumption among regions. We will establish regional consumption cooperation alliances with neighboring cities, integrate tourism resources, jointly develop cross-regional tourism routes, launch regional travel tickets, one-card and other products, and promote the sharing of tourism resources and the mutual delivery of tourists. At the same time, we should strengthen business and trade cooperation, establish a regional commodity circulation network, promote the free circulation of commodities, and jointly create a large consumption market[10]. For example, Nanchang, Jiujiang and Jingdezhen cooperate to form a cultural tourism consumption belt in Jiangxi. Second, expand the remote source market of tourists. According to the needs of remote urban consumers, combined with the consumption characteristics and advantages of Nanchang, we will develop targeted tourism products, commercial activities and consumption packages, and cooperate with remote urban travel agencies and tourism e-commerce platforms to promote online and offline to attract remote consumers. For example, for consumers in economically developed regions such as the Yangtze River Delta and the Pearl River Delta, high-end customized tourist routes and characteristic cultural experience Tours are launched, and precision marketing is carried out by means of online advertising and social media promotion. Third, we will develop cross-border consumption and

international business. Nanchang will take advantage of its location to strengthen economic and trade cooperation with countries and regions along the "Belt and Road", build a comprehensive pilot zone for cross-border e-commerce, improve the cross-border e-commerce service system, attract cross-border e-commerce enterprises to settle in, enrich the type of cross-border commodities, and reduce shopping costs. At the same time, we will actively hold international commodity fairs, business fairs and other activities to promote international business and trade exchanges and enhance Nanchang's status and influence in the international consumer market.

FUNDING

This work was supported by the the Nanchang Social Science Planning Project "Research on the Paths for Nanchang to Accelerate the Construction of a Regional Consumption Center City" under Grant "YJ202419".

CONFLICT OF INTEREST

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

[1] Galdeman A, Ba C T, Zignani M, et al. City con-sumption profile:a city perspective on the spendingbehavior of citizens. Applied Network Science, 2021, 6(1).
[2] Zhou Yong. Smooth the Domestic Grand Cycle on the Demand Side: From Consumption to Consumption Centers. Academic Journal of Jinyang, 2022, (4): 109-116.
[3] Zhou Yong. The Layout of Consumption Centers: Principles, Logics and Paths. Henan Social Sciences, 2022, 30(2): 38-45.
[4] Zhou Yong. The Spatial Development of China's Consumption Centers: Dynamics, Expansion and Paths. Seeker, 2022, (5): 106-116.
[5] Yu Liping. Research on the Paths for Shangrao to Build a Regional Consumption Center City. China Circulation Economy, 2023, (8): 132-135.
[6] Zhu Qinglin, Wang Xiang. The Current Situation, Problems and Paths of Xiangyang, the Provincial Sub-center, in Building a Regional Consumption Center City. Hubei Social Sciences, 2021, (12): 56-62.
[7] Liu Sike, Lu Hongwei, Peng Wei. Paths, Models and Inspirations for Cultivating International Consumption Center Cities: A Comparative Analysis Based on 24 World First-tier Cities. Reform of Economic System, 2021, (5): 70-77.
[8] Wu Jun. An Analysis of the Development Paths of International Consumption Center Cities from the Perspective of Scenarios. Wuhan University Journal (Philosophy & Social Sciences Edition), 2024, (4): 39-50.
[9] Yongbo Sun, Fengqin Wang. Consumption center construction and enterprise ESG performance: Evidence from China. Finance Research Letters, 2025, 72: 106513.
[10] Liu Sike, You Qingnan. The Construction Paths of International Consumption Center Cities from the Perspective of Expanding Domestic Demand. Journal of Zhengzhou University (Philosophy and Social Sciences Edition), 2023, 56(4): 60-66.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3119

THE PRACTICAL PATH OF DIGITAL TECHNOLOGY ENABLING THE HIGH-QUALITY DEVELOPMENT OF CULTURAL INDUSTRY IN JIANGXI PROVINCE

Ping Wu
Regional Development Research Institute, Jiangxi University of Technology, Nanchang 330098, China.
Corresponding Email: jxlg213008@163.com

Abstract: With the rapid development of digital technology, cultural industry is experiencing unprecedented changes. Jiangxi Province as an important province of cultural resources, how to use digital technology to enable the cultural industry to achieve high-quality development, has become an important topic of The Times. By analysis of the development status of the cultural industry in Jiangxi Province and its digitization process, this paper deeply discusses various problems and challenges faced by the application and transformation of digital technology in the cultural industry, and further from the four aspects of strengthening planning and guidance, strengthening talent support, expanding market players and preventing security risks. It puts forward the practical path of digital technology enabling the high-quality development of the cultural industry in Jiangxi Province.
Keywords: Cultural industry; Digital technology; High-quality development; Practical approach

1 INTRODUCTION

Cultural industry is known as the "sunrise industry" and "gold industry" in the 21st century. It plays an irreplaceable role in enriching people's spiritual life, stimulating consumption vitality and promoting employment growth. The 14th Five-Year Plan emphasizes that it is necessary to "make every effort to promote the cultural industry to a new stage of high-quality development, actively cultivate various new forms of cultural business, constantly strengthen the ability of cultural innovation and core competitiveness, and accelerate the modernization of the cultural industry."[1] As an important province with large cultural resources, Jiangxi attaches great importance to the development of cultural industry, and has promulgated and implemented a series of relevant policies and measures in recent years, aiming to drive the structural transformation and high-quality development of cultural industry.

With the all-round development of a new round of digital revolution, the development of digital information technology represented by big data, cloud computing, artificial intelligence and blockchain has shaped a new economic form and deeply empowered[2-3] traditional industries, and the digital transformation of cultural industry has ushered in unprecedented opportunities. With its strong innovation ability[4], efficient communication advantages and extensive integration characteristics[5], digital technology can deeply penetrate into every link of the development of cultural industries. From the conception and expression of cultural creativity to the production and production of cultural products; From the mining and integration of cultural resources to the promotion and marketing of cultural services, digital technology has shown its wide applied space and far-reaching influence[6]. It can not only give traditional cultural resources a new form of presentation, but also accurately grasp the market demand with the help of big data analysis, realize the personalized customization of cultural products and services, and then broaden the market boundary of cultural industry and enhance its core competitiveness.

In response to this development opportunity, Jiangxi Province actively promotes the integration of digital technology and cultural industry, implements the strategy of cultural industry digitalization, and accelerates the cultivation of new cultural entrepreneurship. However, on the whole, the province is still in the stage of exploration and development, and has not yet formed a systematic and perfect practice path. How to give full play to the enabling role of digital technology and effectively promote the high-quality development of the cultural industry in Jiangxi Province has become the focus of current academic circles and industry. Based on this, this paper attempts to analyze the digital development of the cultural industry in Jiangxi Province, explore the existing problems and challenges, and further put forward the practical path of digital technology enabling the high-quality development of the cultural industry in Jiangxi Province, in order to provide useful reference for the high-quality transformation of the cultural industry in Jiangxi Province in the digital era.

2 DEVELOPMENT STATUS AND DIGITIZATION PROCESS OF JIANGXI PROVINCE'S CULTURAL INDUSTRY

2.1 Overview of the Development of Jiangxi's Cultural Industry

With profound historical and cultural deposits, rich red cultural resources and unique folk customs, Jiangxi has a good foundation for cultural industries. At present, Jiangxi's cultural industry has formed an industrial structure dominated by cultural tourism, cultural creative design, film and television production, digital entertainment and other fields. Various

cultural enterprises and cultural and creative parks are constantly emerging, the scale of the cultural market continues to expand, and the competitiveness of the cultural industry is increasingly enhanced. According to the Jiangxi Cultural Industry Development Report (2023), the operating income of large-scale cultural industries in Jiangxi Province will reach 330.511 billion yuan in 2022, up 7.8 percent year on year, 6.9 percentage points higher than the national average growth rate. The total profit reached 23.021 billion yuan, up 17.92 percent. At the same time, the quantity/Qty of cultural enterprises above designated size increased to 2,403, an increase of 306 compared with 2021. Among them, there are 54 large enterprises with an annual operating income of more than 1 billion yuan, with a total operating income of 164.896 billion yuan, accounting for nearly half of the total revenue of Jiangxi's cultural industry.

2.2 The Digitalization Process of Jiangxi's Cultural Industry

In recent years, the digitalization process of Jiangxi's cultural industry has accelerated. New forms of culture, such as digital publishing, digital film and television, digital education, digital animation and digital entertainment, are constantly emerging, injecting new vitality into the cultural industry. The province's 16 industry segments with distinctive characteristics of new cultural formats achieved a total operating income of 106.523 billion yuan, an increase of 14.4% year-on-year, demonstrating a strong momentum of development.

At the infrastructure level, Jiangxi Province continued to strengthen the development support of digital cultural industry. At present, the "1+2+11+105" integrated media linkage command system covering the provincial, city and county levels has been established, which has significantly improved the efficiency of information dissemination. By the end of 2021, a total of 61,000 5G base stations will be opened in the province. Meanwhile, Nanchang, Jiujiang and Shangrao cities have been awarded the first batch of "Gigabit cities" in China, further consolidating the network foundation of the digital culture industry. In terms of industrial form, Jiangxi's digital cultural industry has shown diversified characteristics and has formed its own unique digital cultural industry layout. Among them, Nanchang and Shangrao focus on the expansion of digital games, digital media and Internet services, Jiujiang focuses on the development of digital cultural tourism industry, and Yichun makes efforts in digital entertainment industry. In addition, Jiangxi Province has also made remarkable progress in the construction of digital culture industrial parks. The first batch of provincial-level digital cultural industrial parks have been successfully established in Nanchang, Shangrao and Ganzhou, providing a powerful platform for the agglomeration and development of digital cultural industries.

3 PRACTICAL EXPLORATION OF MULTI-DIMENSIONAL APPLIED OF DIGITAL TECHNOLOGY IN THE CULTURAL FIELD OF JIANGXI PROVINCE

The applied of digital technology in the current cultural industry is increasingly extensive, such as virtual reality (VR), augmented reality (AR) and artificial intelligence (AI) and other technologies have brought new possibilities for cultural creativity and communication. On the whole, Jiangxi's cultural industry has made positive progress in the applied of digital technology, which can be reflected from multiple dimensions.

3.1 Digital Inheritance and Protection of Cultural Heritage

Jiangxi Province is committed to digital protection and inheritance of cultural heritage. Through the applied of digital technology, it is necessary to digitally record and protect ancient buildings, traditional skills and precious cultural relics, so as to improve the sustainability and inheritance efficiency of cultural heritage. For example, the first to the seventh batch of national key cultural relics protection units of the two-line range digitization work; A cultural heritage monitoring and early warning system for Lushan National Park has been established, and a heritage monitoring list and digital archives have been created by using big data and cloud computing technologies; It has built a cultural relics safety supervision platform in Jiangxi Province, and realized data integration with 24 national-level cultural relics protection units and national-level museums.

3.2 Digital Promotion of Cultural Tourism

Cultural institutions and tourist attractions in Jiangxi province are increasingly using digital technologies to create virtual exhibitions and cultural tourism experiences. pass VR and AR technology, tourists can experience rich historical and cultural information in the virtual scenarios to enhance the tour experience. In 2021, Gexian Village Resort in Shangrao, Jiangxi Province jointly held the "Xingyun Music Festival" with NetEase Cloud Music, successfully helping the scenic spot break the circle with the power of digital culture and creativity; The Haihun Hou State Site Museum of the Han Dynasty in Nanchang pass using modern technological means such as VR, AR and naked eye 3D.

3.3 Digital Transformation of Cultural and Creative Industries

In the process of digital development of Jiangxi's cultural and creative industries, a number of enterprises focusing on digital entertainment content and game development have gradually emerged, and are committed to creating and developing digital entertainment products with local characteristics of Jiangxi. A number of cultural and art institutions have also begun to make use of digital technologies such as VR and AR to enrich their exhibition and performance forms and provide a more immersive experience for audiences. For example, Jingdezhen integrates light and shadow,

audio and video, 3D technology, etc. into the classic process and instrument type of ceramic art, and launches and implements the digital project of "Furui Oriental" ceramic art and cultural creative industry.

3.4 Digital Mining and Dissemination of Rural Culture

Many places in Jiangxi Province rely on digital technology to carry out digital mining and dissemination of cultural resources such as traditional villages and rural cultural relics at the industrial level, making contributions to the protection and development of rural culture. Taking Jinxi County, Fuzhou City, Jiangxi Province as an example, relying on the ancient village of Youda with profound heritage and skillfully integrating the advantages of digital technology, it carefully creates and disseminates a series of digital cultural masterpieces highlighting the cultural characteristics, folk skills, local features, pastoral scenery and production lifestyle of Jinxi countryside, which drives the communication, display and consumption of rural culture.

4 PROBLEMS EXISTING IN THE APPLICATION AND TRANSFORMATION OF INSIDE DIGITAL TECHNOLOGY IN JIANGXI'S CULTURAL INDUSTRY

Although Jiangxi's cultural industry and its digital development have achieved certain results, it still faces some problems and challenges in the application and transformation of digital technologies.

4.1 The Level of Applied of Digital Technologies is Uneven

In the process of digital transformation, there is an imbalance of digital level among different regions, different fields and different enterprises in Jiangxi Province. Some small and medium-sized cultural enterprises have insufficient investment in digital transformation and lack of in-depth understanding and effective application of digital technology, which limits the digital transformation of cultural industry; In some areas, especially in some remote or rural areas, cultural practitioners lack digital-technology-related training, resulting in their inability to make full use of digital technology to promote their own creation and dissemination; Some popular areas, such as cultural tourism industry, take advantage of its tourist attraction and market potential to become a key field of digital technology applied, such as Lushan Mountain, Sanqing Mountain and other well-known scenic spots are actively building digital tourism projects. However, the applied of digital technology in many minority cultural and artistic categories, such as Ruichang paper-cutting and Gannan tea-picking opera, is very scarce.

4.2 The Shortage of Professionals in the Field of Digital Culture Industry

The prosperity and development of digital cultural industry is in urgent need of interdisciplinary talents with expertise in both digital technology and cultural fields, which is significantly different from that of traditional cultural industry. At present, the reserve of professional talents in the field of digital cultural industry in Jiangxi Province is still insufficient, especially the lack of industry leaders with leading role and talents with interdisciplinary professional skills, which is closely related to the economic development trend and talent training policy of Jiangxi Province. Jiangxi Province is located in the central region of China. Compared with the economically developed coastal areas, its location advantage is not prominent, and the carrying capacity of talent introduction is relatively weak. From the perspective of the distribution of higher education resources, there is only one "211" university in Jiangxi Province, and no "985" university. As a result, the level and quality of talent training are difficult to meet the actual needs of digital culture enterprises. In addition, the quantity/Qty of art education institutions and cultural research institutions is limited, which further aggravates the problem of talent shortage. As for attracting talents, although Jiangxi Province has issued a series of preferential policies in multiple dimensions such as household registration, financial assistance and social security, there are still obvious gaps in the support, breadth and depth of policies compared with neighboring provinces, making it difficult to retain high-level talents, especially professional[7] talents in the field of digital culture, by means of effective policy mechanisms.

4.3 Digital Culture Market Players are not Strong

Compared with developed regions and neighboring provinces, Jiangxi Province has few leading digital platforms in the country, and there is a shortage of influential high-quality "Internet + industry" enterprises in the national range, especially the leading enterprises in the digital culture industry. In recent years, the new forms of digital culture in Jiangxi Province have shown a rapid development trend, but the overall scale is small and the economic benefits are not obvious[8]. In terms of the supply of original, initial and exclusive cultural products and services, the digital culture enterprises in Jiangxi Province are relatively insufficient, and most of them are located at the low end of the "smile curve" in the industrial chain, with weak competitiveness. In addition, in terms of the development of culture and science and technology industry, Jiangxi Province has not yet built a intact industrial chain and product system, and its radiating role in promoting others industries is not quite obvious.

4.4 Digital Culture Laws and Regulations are not Perfect

In the process of digital transformation of the cultural industry in Jiangxi Province, laws and regulations concerning intellectual property protection, data privacy, and industrial supervision are not yet perfect. Some digital cultural enterprises do not pay enough attention to data management and security, leading to the existence of data leakage and infringement risks. It is widely believed that piracy in online literature, digital audio and other fields is still a persistent problem, and the legal rights and interests of original creators are not only costly, but also blurred, which has a certain impact on their creative enthusiasm. In addition, with the increasingly strong momentum of innovation in Jiangxi's digital culture industry and the endless emergence of new formats, it is easy to be restricted by the old system or regulatory vacuum, such as audio, video and other subdivisions, the required licenses are numerous, the application process is complex, and enterprises are faced with many difficulties. At the same time, the emerging field of network live broadcasting is in a state of lack of supervision, which needs the intervention of an effective regulatory mechanism.

5 THE PRACTICAL PATH OF DIGITAL TECHNOLOGY ENABLING THE HIGH-QUALITY DEVELOPMENT OF JIANGXI'S CULTURAL INDUSTRY

5.1 Strengthen Planning and Guidance, and Optimize the Environment for the Digital Development of Cultural Industries

First, strengthen the effectiveness of policy support, formulate and issue a series of incentive policy document, provide necessary funds and policy assistance to cultural enterprises and institutions in the form of financial assistance, tax relief and special funds, expand the development foundation of private, small and medium-sized micro cultural enterprises, and encourage them to adopt digital technology for innovation and development. Second, strengthen technical training and knowledge popularization, and carry out systematic training and education activities related to digital technology for practitioners in the cultural industry. In particular, cultural practitioners located in remote areas or rural areas should focus on improving their applied level of digital technology and innovation ability. Third, digital protection platforms and cooperation mechanisms should be established. For some minority cultural and artistic categories, a digital protection platform can be established to digitally record, store and disseminate them. At the same time, the minority culture and arts can also carry out cross-border cooperation and innovation with the fields of tourism, education, science and technology, and jointly develop new digital technology products and applied.

5.2 Strengthen Support for Human Resources and Strengthen the Construction of Human Resources in the Digital Cultural Industry

First, the implementation of the talent introduction project, targeted for Beijing and Tianjin, for the whole country to introduce high-level talents, open up the cultural industry and digital technology talent introduction green channel. pass the establishment of expert workstations, talent stations and other forms, we sincerely invite high-quality composite talents of digital culture industry to Jiangxi to carry out consulting and guidance, special lectures and joint research on technical problems and other activities[9]. At the same time, the competitive talents stay in Jiangxi policy will be formulated, and support will be strengthened in all aspects, covering venture capital, scientific research funds, salary subsidies, housing subsidies, household registration management, family placement, education and medical care, etc., so as to solve the worries of talents. Second, make full use of the abundant local science and education resources, encourage colleges and enterprises to carry out in-depth cooperation, build a platform[10] for professional personnel training, focus on cultivating highly skilled, high-end cultural creativity and operation and management talents, and enhance the talent reserve of local cultural industry. Colleges and universities in some provinces should set up majors related to the digital cultural industry to systematically impart professional knowledge in many aspects, including business operation, cultural innovation, laws and regulations, and strive to cultivate high-quality professionals in this field. The third is to improve the incentive mechanism system, formulate incentive measures in terms of financial support and professional title evaluation, fully mobilize the enthusiasm and creativity of various talents in the field of cultural industry and digital technology, and ensure the effective configuration and efficient utilization of human resources.

5.3 Strengthen Market Players and Promote the Vigorous Development of All Kinds of Digital Cultural Industry Enterprises

First, make every effort to build leading enterprises. We are committed to cultivating a group of leading digital culture enterprises that master core technologies, possess original strength and have significant market competitive advantages. Actively promote all kinds of advantageous cultural enterprises to break through regional and industrial restrictions, carry out mergers, joint, and reorganization, in order to integrate resources, optimize structures, and comprehensively improve the overall market competitiveness of digital cultural enterprises in Jiangxi Province. Second, vigorously support project brand building. We will make innovations in policies and measures, support major digital projects in the cultural industry, make good use of the provincial special funds and equity investment funds for guiding the development of the cultural industry, and increase funding for key cultural industry projects and quality projects. Third, we need to promote competitive development. We will strengthen the development of incubation bases and creative parks for digital cultural industries, build platforms for sharing market, capital, talent and technology, and encourage all market players to compete fairly, develop together and promote each other.

5.4 Guard Against Security Risks, and Promote the Rule of Law and Organizational Construction of the Cultural Industry

First, we will strengthen measures to protect intellectual property rights. Strengthen the management and guidance on the intellectual property rights of digital culture enterprises and products, actively guide digital culture enterprises to enhance the awareness of intellectual property rights protection, encourage them to take the initiative to apply for patent rights and trademark exclusive rights, and consciously safeguard their own rights and interests through legal means. At the same time, strengthen the supervision and investigation of all kinds of infringement, build a comprehensive supervision system, strictly crack down on infringement chaos, and build a solid legal barrier for the rapid and orderly development of digital culture industry in Jiangxi Province. Second, improve the construction of copyright related systems. We will continue to improve the copyright protection system, refine copyright ownership and division of labor, promote the formulation of relevant rules, regulations, policies and regulations adapted to new forms of business, and fully protect the legitimate rights and interests of employees in new forms of business. Third, we need to establish a mechanism for collaborative governance involving multiple entities. The government should play a guiding, supporting and supervising role in the governance of the digital culture industry to ensure the effective implementation of policies and fair competition in the market. To give play to the role of profit-making organizations and the public in actively consulting and jointly participating in the formulation of policies and relevant laws and regulations, so as to form a good situation of joint governance by multiple entities.

FUNDING

This work was supported by the Science and Technology Project of Jiangxi Provincial Department of Education in 2024 (Project No. GJJ2402510).

CONFLICT OF INTEREST

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

[1] Hu Bozheng. "Digitalization+Culture" promotes new development of cultural industry. Cultural Industry, 2024, (31): 124-127.
[2] Yang Zhen, Chen Jin. Innovation and Governance of Corporate Social Responsibility in the Age of Digital Intelligence. Journal of Shanghai University of Finance and Economics, 2019, 22(06): 33-51.
[3] Li Z H, Mao J, Cao P J, et al. Digital transformation: the inevitable choice of China's tobacco technology innovation and development. Tobacco Science and Technology, 2022, 55(01): 1-8.
[4] Jiang Y T, Zhang Z H, Dai Z, et al. Research Review, hot topics and Emerging Trends in the field of digital economy:analyzed based on bibliometrics. Journal of Technology Economics, 202,41(12):77-90.
[5] Shen Zhengzheng. Digital Technology enables the inheritance and development of Chinese Fine Traditional Culture. Theory Monthly, 2024, (05): 141-149.
[6] Jiang Xiaojuan. Technology and Culture in the Digital Age. Social Sciences in China, 2021, (08): 4-34+204.
[7] Guo Jianhui. Policy Innovation Path for the high-quality development of Jiangxi's cultural Industry. Jiangxi Social Sciences, 2019, 39(04): 221-227.
[8] Liu Xiaoqing, Liu Yang. Problems and Countermeasures of cultural Industry development in Jiangxi Province. China National Conditions and Strength, 2017, (12): 38-40.
[9] Zeng Hao, Zhang Menglin. Research on Integrated Development and Policy Support of cultural Industry and scientific and technological Innovation in Jiangxi Province. Construction of Old Area, 2022, (11): 36-42.
[10] Liu Zhigang, Liu Qian. Research on high-quality development of red cultural Industry in Jiangxi Province under the background of VR technology. Journal of Jiangxi University of Science and Technology, 2022, 43(06): 111-116.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3120

THE GOVERNANCE PROCESS AND EVALUATION OF SCHOOL CHOICE IN CHINA'S COMPULSORY EDUCATION UNDER THE PERSPECTIVE OF EDUCATIONAL EQUITY

PengRun Chen
University College London, London WC1E 6BT, United Kingdom.
Corresponding Email: pengrunchen68@gmail.com

Abstract: This paper examines the governance and implications of school choice within China's compulsory education system, emphasizing the quest for educational equity. By leveraging a qualitative analysis of policy adaptations and their socio-economic impacts, it explores how school choice has evolved as a response to the unequal distribution of educational resources and its effects on social equity. The findings reveal that despite various policy reforms aimed at curbing school choice irregularities, disparities persist, influenced by socio-economic status and regional disparities. The study concludes that while policy measures have managed to regulate school choice to some extent, achieving genuine educational equity requires more comprehensive strategies that address underlying socio-economic disparities.
Keywords: School choice; Compulsory education; Educational equity; Socio-economic disparities

1 INTRODUCTION

Educational equity is one of the core goals of modern educational systems. In China, to achieve this goal, public schools at the compulsory education stage underwent reform with the passage of the Compulsory Education Law of the People's Republic of China in 1986. This reform included the implementation of a "school districting" policy, ensuring that children could attend designated schools within their residential districts for free. However, despite the policy's aim to reduce the disparity in educational resource distribution, the allocation of educational resources in China has not yet achieved balanced development [1]. As a result, school choice has gradually become an increasingly significant issue in China's basic education. Parents, seeking better educational quality for their children, have adopted various school choice methods such as "power-based school choice," "money-based school choice," and "property-based school choice." These phenomena not only reflect the uneven distribution of educational resources but also exacerbate educational inequality, creating a Matthew effect where the advantaged become more advantaged, and the disadvantaged fall further behind[2].This educational choice reflects Bourdieu's theory of "habitus," where affluent families have the opportunity to choose better educational resources for their children, thereby maintaining or enhancing their social status, while families with fewer economic resources are unable to access these opportunities, perpetuating their disadvantaged position. The persistence and transmission of this inequality form a mechanism of social reproduction[3].

To address this issue, the Chinese Official Department has implemented several policies such as "school districting," "zoning admissions," and "simultaneous enrollment for public and private schools" (these policy terms will be explained in detail in subsequent chapters). In 2014, the Official Department further intensified its efforts to curb school choice-related fee irregularities, mandating that "by 2017, more than 95% of middle schools in major cities should implement 'zoning admissions,' with 95% of students being admitted through the 'school districting' policy." This policy has been rigorously enforced in recent years to prevent school choice. To date, policy adjustments have ostensibly achieved the goal of "No-Choice" (Ministry of Education of the People's Republic of China, 2014). "No-Choice System" refers to the complete elimination of all forms of "school choice" other than proximity[4]. In the following, this will be referred to as the "No-Choice System" .Therefore, in China, there is no formal school choice policy; rather, there are measures to manage the school choice phenomenon.

The primary question remains: has the "No-Choice System" policy effectively promoted educational equity? This paper will explore hot issues related to school choice during the compulsory education stage in China, the process of governance, and its impact on social justice. It will also analyze how policy changes during this process has influenced school choice methods, further examining how social inequality is manifested in school choice. The goal is to provide some insights for the formulation and improvement of educational policies.

2 THE EMERGENCE AND GOVERNANCE OF SCHOOL CHOICE PHENOMENA IN CHINA

Before delving into the issue, it is essential to understand what school choice refer to in China. In China, school choice involves parents opting out of the "school districting" policy and instead utilizing various means to enroll their children in schools of their choice [5]. The fundamental cause of the school choice phenomenon is the unequal distribution of educational resources in China. Parents and students, in their pursuit of better educational opportunities, actively choose high-quality schools[6]. Therefore, the emergence of the school choice phenomenon is not only a manifestation of

parents' pursuit of educational quality but also reflects the disparity in the distribution of educational resources in society. This discrepancy underscores the conflict between the high demand for quality educational resources at certain developmental stages and the shortage of existing educational resources.

2.1 Reasons

In analyzing why school choice has become a social hotspot, this paper utilizes Bourdieu's habitus theory to explore how policy, economic, social, and cultural factors interact. This theory emphasizes that individual behavior is not solely based on personal thoughts but is also influenced by social structures and rules, revealing the social structural dynamics behind individual school choice decisions [7].

Firstly, the imbalance in educational resources caused by policy influence and social realities is a fundamental factor leading to the school choice phenomenon. Since the founding of the People's Republic of China, the Official Department has implemented a series of policies to concentrate educational resources in key schools, such as the policy of the 1962 *Notice on Effectively Managing a Group of Full-Time Middle and Primary School* [8]. These schools, collectively referred to as key schools, benefited from concentrated resources, resulting in improved teaching quality and academic performance. While this approach nurtured many urgently needed talents during certain historical periods, it also exacerbated disparities in school quality, creating a dichotomy between elite and regular schools. Key schools, with their superior graduation rates and reputations, became the preferred choice for parents and students, driving other parents to also seek these schools for their children despite not meeting the entry criteria [9]. This laid the groundwork for school choice to become a social hotspot.

Secondly, policy directions have, to some extent, intensified the issue of school choice becoming a social hotspot. The reform and opening-up policy implemented in 1978 and subsequent education policies continued to encourage the establishment of key primary and secondary schools until the promulgation of the Compulsory Education Law in 1986, which began emphasizing educational equity and balanced development. The 2006 revision of the Compulsory Education Law stipulated restrictions on setting up key schools and key classes [10]. Despite these restrictions, key schools continued to exist and needed more funds to develop, leading schools to introduce "school choice fees" to balance supply and demand. The standard of these fees varies according to the type, location, and educational resources of the school, and is not regulated by the Official Department. This study argued that the unequal distribution of public educational resources by local Official Departments facilitated school choice, and the competition for "school choice fees" between schools led to public acceptance of school choice. This provided an opportunity for families with significant financial and social resources to choose schools for their children. Economically or socially disadvantaged families had to rely on academic performance to secure places in key schools, leading to increased competition and pressure on entrance exams [11]. Many parents and students believe that attending a "good" or "better" school enhances academic performance and future prospects.

Thirdly, social and cultural factors have contributed to the formation of school choice phenomena, driving it to become a social hotspot. Social cultural factors influence parents' educational choices. Under the traditional belief that "education is the key to success," parents prioritize their children's education. In the context of exam-oriented education, academic performance becomes the primary criterion for evaluating students. This affects parents' educational choices and creates a competitive educational environment at the societal level. Wealthy parents tend to choose key schools for their children. In this environment, high scores and prestigious schools become important indicators of student and family success. Therefore, parents' school choice decisions are deeply embedded in this social cultural habitus, reflecting their pursuit of high social status and cultural capital, viewing quality educational resources as crucial for social upward mobility. However, as quality educational resources are limited, parents resort to legal but irregular means to secure school places for their children. As school choice became widespread, the Official Department long remained an observer, allowing various forms of school choice to emerge.

Researchers have identified five main types of school choice:

(1) choosing schools through power, where parents with certain social status and power use improper means to select schools for their children, such as using social connections or obtaining recommendations;

(2) choosing schools through money, primarily involving sponsorship fees;

(3) a combination of choosing schools through scores and money, where key schools charge "school choice fees" for students with lower scores;

(4) choosing schools through special talents, where key schools raise admission standards, and students attend external training programs to develop one or more special talents to gain entry into key schools;

(5) choosing schools through purchasing properties, where parents buy houses or transfer household registration to key school districts to secure educational rights for their children. In practice, parents often use a combination of these methods.

Therefore, parents' ability becomes a key factor in whether their children can access quality educational resources. Parents' status (power), financial ability, and social influence play significant roles in school choice, while families without these resources lose out in this unfair competition. Official Department educational policies, to some extent, reinforce parents' preference for key schools, which has become a societal habitus over time. Choosing quality educational resources has become a cultural pattern that persists to this day.

Through this analysis, we can see how school choice has evolved from an educational policy issue to a social hotspot. The causes of school choice becoming a social hotspot are multifaceted, involving parents, society, and policy factors.

The prevalence of school choice not only affects educational equity but also reflects the urgent demand for quality educational resources and deep concerns about social justice.

2.2 The Evolution of the “No-Choice System” in China

Since the promulgation of the Compulsory Education Law of the People’s Republic of China in 1986, although the system of key schools was officially abolished, these schools have continued to exist under different names or disguises [12]. Consequently, the phenomenon of school choice has persisted, prompting continuous Official Department efforts to address it. In the 1990s, a family's economic status determined whether a student could attend a "key school". This situation led to issues of educational inequity. Local Official Departments, following central directives, implemented a series of policies such as “prohibition of school choice” and “proximity enrollment,” establishing a dual governance system from central to local levels.

2.1.1 Using the no-exam admission system to reduce the school choice fever (1978—1995)

In the 1970s and 1980s, to popularize education and reduce the burden on students, the policy of “no-exam proximity enrollment” became a fundamental Official Department policy. This policy aimed to ensure children’s right to enroll in nearby schools without limiting families’ ability to choose schools. With economic development, parents' pursuit of high-quality education increased, leading to more and more school fees, which drew the attention of education authorities. In 1995, the Ministry of Education issued the “Five No's Principle”, explicitly banning school choice behaviors in the nine-year compulsory education stage, thus establishing a national policy stance against school choice.

2.1.2 Coexistence of school choice and admissions system reforms (1995—2016)

Despite the Official Department’s repeated emphasis on banning school choice, the actual effectiveness was limited. Policy adaptations, relaxations, and implementation distortions allowed school choice to persist. For example, categories like "sponsorship fees" and "transfer fees" provided opportunities for parents to choose schools. Some policies, such as the 1997 allowance for a few schools to admit school-choice students, further weakened governance efforts (State Education Commission of the People’s Republic of China, 1997). Additionally, private schools, through ties with extracurricular training schools, engaged in covertly selecting top students, making themselves the preferred school choice for parents aiming for school choice. In Shanghai, for example, the educational performance advantage of private junior high schools was mainly due to better student intake. The phenomenon of "private first, public as fallback" in Shanghai's admissions is a result of this[13].

2.1.3 The Official Department increased efforts to govern school choice, significantly reducing the space for school choice actions (2010 to present)

Under the basic principle of proximity enrollment proposed in 1986, governance of school choice shifted from prohibiting school choice fees to balancing resources among schools and optimizing the admissions system. Policies including teacher rotations, computerised allocation, and simultaneous enrollment for public and private schools gradually limited school choice behaviors. By 2017, the central Official Department explicitly proposed adopting multiple measures to resolve school choice issues. By 2018, the Ministry of Education of the People's Republic of China issued the "Notice on Ensuring the Proper Enrollment Work of Regular Primary and Secondary Schools for 2018", which mandated that the enrollment processes of private schools be managed under the local educational administrative departments, and synchronize their admissions with public schools. This effectively eliminated the long-standing "dual-track system" where private schools had different standards and timelines for admissions, thus addressing the heated issue of "private school choice." Additionally, the Ministry of Education focused on resolving issues related to the linkage between primary and secondary school admissions and extracurricular training institutions' exams and competitions, the cross-regional poaching of students by private schools, and admissions for students with special talents. In 2020, the era of " universal lottery admission" began, effectively curbing school choice. Nowadays, the “No-Choice System” has been initially realized, with parents only able to achieve "proximity enrollment" through purchasing homes in designated school districts. (see Table 1 for detailed policy concepts).For instance, Jinan City in 2015explicitly proposed achieving “No-Choice System” in compulsory education. Aside from enrolling through purchasing homes near schools, all other forms of school choice were entirely canceled [14].

In summary, China’s "No-Choice System" has evolved from no-exam admission to gradual improvement in school choice governance and to intensified governance in recent years. The phenomenon of school choice has been effectively curbed, achieving the primary goal of the “No-Choice System”.

Table 1 Explanation of Partial Policies for Governing School Choice Issues

Concept name	legislature	Conceptual explanations
1. Proximity enrollment	State Education Commission of the People’s Republic of China	In 1986, the State Education Commission of the People’s Republic of China issued the *“Notice on Reforming Junior High School Admission Methods in Popularizing Areas",* proposing to "abolish the junior secondary school admission examination ". The policy of proximity to schooling became the basic statutory principle for enrolment at the compulsory education level in China, requiring students to enroll in schools close to their home, in order to safeguard educational equity
2. Computerised	Local Official	Computerised allocation, also known as universal lottery admission, is a

allocation	Department	method of randomly allocating school places by computer. It was first proposed by the Guangzhou Education Department in 1991, with the aim of avoiding human intervention and ensuring fairness in schooling opportunities.
3. Teacher rotations	State Education Commission of the People's Republic of China	Teacher rotation system refers to the regular rotation of teachers among different schools in order to balance the teaching force, improve the teaching standard of weak schools and promote equity in education.
4. Group schooling	Local Official Department	Group schooling is the formation of education groups of quality schools and weak schools to enhance the overall quality of education and expand the coverage of quality education resources through resource sharing and unified management.
5. Synchronization of private schools admissions with public schools enrollment	Local Official Department	A new guideline on improving the quality of compulsory education, issued by China Central Committee and the State Council in 2019, proposes that 'the enrollment of private compulsory education schools should be brought under unified management of the approval authorities, and be synchronized with public schools; for cases where the number of applicants exceeds the enrollment plan, computer-based random selection should be implemented.'

3 ANALYSIS AND EVALUATION

Before the analysis, this paper first distinguishes between the two different conceptual categories of "school choice" and "school choice issues." Internationally, school choice is defined as the selection of schools, also known as educational choice or parental choice. In contrast, the term "school choice issues" in China refers to the negative impacts arising from irrational school choice behaviors such as the commoditization and monetization of school choice. As analyzed previously, China's "No-Choice System" system refers to the continuous governance of "school choice issues," ultimately aiming to make school choice disappear.

Next, defining educational equity is necessary. Clearly, Educational equity, due to its broad scope and rich content, is challenging to define directly from a theoretical perspective. This paper mainly addresses the two levels of "equity at the starting point of education" and "equity in the educational process," meaning that students can enter schools on equal terms and receive equal educational resources.

3.1 "No-Choice System" and Educational Equity

By analyzing the evolution of the "No-Choice System", we can see that due to the uneven distribution of educational resources, the quality of education varies greatly between regions, urban and rural areas, and schools. The public's school choice preference is not for educational personalization and diversity but for high-quality educational resources. Before the implementation of the "No-Choice System", wealthy and powerful families could choose high-quality schools to receive good education, while poor and powerless families could only attend relatively weak schools, affecting the fairness of educational opportunities for disadvantaged groups. In the knowledge economy era, education is a path for many poor families to enter mainstream society. Therefore, it is necessary to prevent the intergenerational transmission of poverty and promote relative educational equity.

Increasing the implementation of the "No-Choice System" can effectively cut off the channels for obtaining school choice through paying high "school choice fees" or "sponsorship fees," thus effectively governing the phenomenon of "chaotic fees" and positively promoting educational equity. However, these "No-Choice Systems" are only a temporary solution to the current imbalance and do not stop school choice behavior. In today's society, where parents place high importance on their children's education, they will still compete for limited high-quality educational resources through other mechanisms, with the most feasible way being purchasing houses in the school district to "attend nearby schools". As Bourdieu (1986) pointed out, all types of capital can be acquired through various conversion efforts from economic capital. Therefore, parents who can afford it may move to the vicinity of their desired school to effectively activate school choice. Thus, the phenomenon of school choice at the compulsory education stage in China has extended from a single educational issue to various related fields such as the housing market, becoming a comprehensive social problem. This study believes that this is an indirect form of "paying for school choice," which exacerbates the unequal distribution of educational resources, creates invisible educational barriers for disadvantaged groups, solidifies social classes, and intensifies social differentiation. This goes against the goal of the national balanced development of compulsory education.

3.2 The Maintenance of Inequality and Habitus under the "No-Choice System"

In the previous section, we explored the positive role of the "No-Choice System" inpromoting social equity, while also pointing out its negative effects of increasing social differentiation and solidifying social strata. This raises a question: within the institutional framework, how does individual habitus influence the distribution of educational resources?

As previously mentioned, under the "No-Choice System", the distribution of educational resources appears to be more equitable. However, as the pressure for school district enrollment increases, financially capable parents will activate

school choice by purchasing houses in desirable school districts. This transformation not only reveals the diversity of capital forms but also their interactions and conversions. However, this transformation is not always equal, as it is often influenced by various factors, one of which is the individual or group habitus. The social life is essentially the result of the complex and interwoven interactions of habitus. Habitus, as a relatively stable disposition and mindset formed by individuals or groups during socialization, greatly influences how they acquire, utilize, and convert different types of capital. Different habitus may lead to different efficiencies and outcomes in capital conversion, further exacerbating social inequality[15].

Firstly, different family backgrounds and social statuses shape different habitus. Children from wealthy families often possess more cultural and social capital. They are more confident and composed when making educational choices, better able to utilize and integrate resources to secure the "best" schools for their children. In contrast, children from poor families may face more difficulties and challenges on their educational paths due to a lack of necessary support and guidance.

Secondly, the culture and educational philosophy of schools also influence the formation of students' habitus. Some schools emphasize the cultivation of students' overall quality and innovation abilities, while others may overly focus on exam-oriented education and academic rankings, leading students to develop a mindset centered around exams and utilitarianism.

Thirdly, public opinion and media propaganda also affect the formation of habitus. Under the “No-Choice System” , some media and public opinions may excessively emphasize the importance of the "starting line," causing parents and students to over-pursue the so-called "famous school effect" while neglecting individual differences and diversity in student development. This social atmosphere invisibly increases competitive pressure and inequality among students.

Therefore, we must ask: in the pursuit of educational equity and balanced development, how can we guide individuals to form a positive and healthy habitus? How can we balance institutional fairness with individual differences? These questions deserve further reflection and exploration.

4 DISCUSSION

4.1 Why Focusing on Regulating the School Choice Phenomenon and not Allowing Parents to Freely Choose Schools

The initial intention behind regulating school selection was to promote equitable distribution of educational resources and reduce disparities between schools. However, due to the uneven distribution of educational resources, especially the scarcity of high-quality educational resources, the phenomenon of school choice has persisted. The Chinese Official Department, adhering to the principle of nearby enrollment, has implemented various measures to curb school choice, aiming to promote educational fairness. Although these measures have achieved certain successes, the fundamental issues of unequal distribution and scarcity of quality educational resources have not been fundamentally resolved. This has led to persistent demand for school choice among parents and students, transforming the "school choice issue" at the compulsory education stage into a "school district housing issue." This has impacted educational fairness and social mobility in several ways.

First, the surge in school district housing prices has made it unaffordable for many families, thereby exacerbating social inequality through the unequal distribution of educational opportunities. Second, the existence of school district housing is also tied to significant issues like intergenerational wealth transfer, leading to further entrenchment of educational resources and making high-quality educational resources less fluid and shared. Parents' social, economic, and cultural capital plays a crucial role in their children's access to educational resources. These three forms of capital interact within the educational field, facilitating intergenerational reproduction of social class and solidifying social stratification. Consequently, many local Official Departments in China are increasingly addressing the hot issue of school district housing[3].

However, it is essential to reflect on why China does not establish a reasonable school choice system, given that the regulation of school selection exacerbates social inequality.

In contrast, Official Departments worldwide strive to promote school choice. Western countries, represented by the UK and the US, have issued relevant laws and regulations to guide orderly implementation of school choice from a Official Departmental perspective. For example, in the UK, parents are given more freedom to choose school and their schools are more diverse, with a broader range of management structures, including selective schools, religious schools, and specialized schools[16]. Such school choice systems expand students' educational options and emphasize individual differences.

In China's compulsory education stage, school choice differs significantly. Chinese parents primarily choose schools with high teaching quality, referred to in this study as "key schools." Under the highly selective educational system in China, parents place greater importance on the quality of education. Professor Wang Rong of Peking University states China is a highly selective society, and each step involves screening. Being screened out means losing access to high-quality education at the next level. The 2017 Overview of Educational Achievements in China shows that students in vocational schools constitute 40.1% of those in high school education, while 0.1% attend vocational or adult high schools (Ministry of Education of the People's Republic of China, 2018). This means that two-fifths of students cannot enter regular high schools, implying that they are unlikely to attend higher education, highlighting the highly selective nature of China's education system. The belief that "education changes fate" is fundamental to social mobility in China.

The desire for upward mobility among economically disadvantaged families and the fear of downward mobility among middle-class families intensify spontaneous educational competition, leading to irrational educational views among parents. Consequently, various school choice issues and extracurricular tutoring problems have emerged.

Therefore, even with a reasonable school choice system, the scarcity of high-quality resources in China would lead to the recurrence of these school choice issues. In other words, the emergence of school choice phenomenon is a rational choice in the context of unbalanced educational resources. Chinese parents' school selection results from the conflict between the scarcity of high-quality educational resources and the growing demand for these resources [17]. Thus, at present, ,it is not appropriate for the school choice system to be established in the compulsory education stage in China. Then, how can the inequalities caused by the nearby enrollment system be resolved?

4.2 Whether the Continued Implementation of China's "No-Choice System" Promotes the Educational Equity

First, the implementation of the "No-choice system" has played a very positive role in promoting educational equity. This system helps curb speculative behaviors associated with purchasing school district housing by adopting measures such as multiple school districts per neighborhood, random computer lottery, unified enrollment of residents, and group management of schools, effectively reducing speculation driven by school district housing purchases. For instance, the multi-district mapping involves assigning multiple schools to a single neighborhood and distributing enrollment slots through a computerized lottery, encouraging parents to make more rational school district housing choices. Additionally, the implementation of group-based schooling, with the mobility of teachers from prestigious schools, has diminished the distinction between "key" and "non-key" schools. Nanjing has narrowed the gap between key and regular primary schools by adopting group-based schooling, transferring quality educational resources to weaker schools [18]. This study suggests that once the issue of school district housing is controlled, with the diminishment of exam-oriented education and the implementation of holistic education, it will change parents' habitus. Moreover, by increasing the total amount of quality educational resources and continually reducing regional disparities in education, the balanced development of quality educational resources can be gradually achieved. Thus, the continuous implementation of a "no-choice system" based on non-selective, proximity-based enrollment could promote educational equity in compulsory education in China. However, until educational resources are uniformly improved in quantity and quality, it ensures access to education for all, not necessarily access to high-quality education. Therefore, "proximity-based enrollment" does not satisfy all parents and students' pursuit of quality education. At this stage, the no choice system represents only a basic level of equity at the starting point of education [19]. This is also precisely why the phenomenon of "school choice" occurs.

4.3 Whether the Continuous Implementation of The "No-Choice System "Restricts Students' Freedom of Choice

The ongoing implementation of the no choice system has, to some extent, limited students' freedom to choose. This is because it overlooks the developmental patterns and characteristics of learners, forcing them to passively accept a predetermined education, with many unable to choose a learning environment that suits their personal talents and abilities. In China, educational instruction is delivered through class-based teaching, where each class receives the same educational resources according to a fixed timetable. While this approach may seem fair from the outset, it does not account for individual differences among students—some learn quickly while others do not, leading to inherent unfairness in the educational process. Allowing some degree of school choice within reasonable limits could address these limitations of the no choice system and resolve issues of inequity in education. For instance, the tiered education system at Beijing No. 4 High School offers students increased choice within the school, enhancing fairness in education. This school employs two main tiered teaching approaches: one based on overall student ability and another based on specific subject skills, allowing students to select classes that best fit their needs, though these choices are still subject to certain constraints. However, school choice is not without risks; it is not necessarily a condition for improving academic performance and might even lead to poorer educational outcomes [20].Similarly, studies have concluded that while many believe choice and competition can drive progress, there is insufficient evidence to support this view [21].

Furthermore, school choice can prove ineffective. For example, in England, parents have the freedom to choose schools, but the likelihood of achieving the desired outcome is not high. This means that despite parents' wishes for their children to attend a particular school, due to intense competition, limited spots, and various other factors, these expectations are often unmet. Additionally, this choice increases the cost of investment, and cause anxiety among parents[22].

Therefore, this paper argues that both overly permissive and overly restrictive choices can create relative inequities. However, reasonably expanding the range of choices and diversifying selection criteria can be justified. For instance, educational choice could extend to the type of education, form of education, type of school, type of courses, and selection of teachers [23]. Currently in China, choices are primarily based on teaching quality, and there is not yet an adequate system in place to cater to students' specific talents.

5 CONCLUSION

While school choice possesses rationality, allowing it to proceed unchecked can inadvertently exacerbate the skewed distribution of educational resources, fostering unfair practices such as high and irregular selection fees. Thus, China

should adhere to the "No-Choice System" based on the principle of nearby enrollment. To promote balanced development in compulsory education, efforts should focus on increasing the overall quantity of high-quality resources and distributing them reasonably. Appropriate reforms should be implemented, such as setting up key classes within schools to achieve rational stratification, enhance teaching efficiency, and meet students' needs.

In terms of diverse school options, it is essential to ensure that students with special talents can choose specialized classes within the school, reducing the financial burden of external tutoring. Additionally, collaboration with education experts, media, and other stakeholders is necessary to actively guide the public towards a rational understanding of school selection and its relationship with academic development. This can help change parents' habitus from a value-oriented perspective.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

[1] Jin J R. Premise, Value and Approaches of Promoting Fairness of Compulsory Education by Policy of Nearby Enrolment. Teaching & Administration, 2018(21): 20-23.

[2] Ye Y, Chen LL. Reflections on the Governance of School Choice in Compulsory Education. Educational Science Research, 2018(04): 44-47.

[3] Bourdieu P. The forms of capital. In J. G. Richardson (Ed.), Handbook of theory and research for the sociology of education. New York, NY: Greenwood, 1996.

[4] Shi S B, Ju Z Y. Remeasurement of the Capitalization Effect of Education: A Regression Discontinuity Based on "Zero School Choice" Policy For School District Housing. Nankai Economic Studies, 2022(08): 139-157+175.

[5] Wu X. School choice with Chinese characteristics. Comparative Education, 2012, 48(3): 347–366. http://www.jstor.org/stable/23265868.

[6] Li M, Sha X. Causes of “School Choosing Fever” in Primary and Secondary Schools and Its Governance. Journal of Hunan University of Humanities,Science and Technology, 2023(03): 99-105.

[7] Bourdieu P. Homo Academicus. Cambridge, MA: Polity Press; Stanford, CA: Stanford University Press, 1984.

[8] Lu Y. Mutual Construction between Compulsory Education Enrollment Policy in China and School Choice Action: Evolution Process, Regular Pattern and Enlightenment. Contemporary Education Sciences, 2022(06): 89-95.

[9] Zhang X L. Causes, influences and countermeasures research on “school choice hot” of compulsory education stage. Journal of Chongqing University of Education, 2015, 28(3): 91–94.

[10] He X Z. Evolution and Value Selection of Chinese Enrollment Policy. Journal of Educational Development, 2018(09): 40-43.

[11] Shen Q, Liu L. Matthew Effect in the Study of "Nearby Enrollment" Policy and Its Counter measures. The Guide of Science & Education, 2019, 32: 187–188. https://link.oversea.cnki.net/doi/10.16400/j.cnki.kjdkz.2019.11.088.

[12] Yu Z. Secondary Education: Handbook of Education in China. Northampton, Massachusetts: Edward Elgar Publishing, 2014, 118-139.

[13] Qi X, Zheng L. Does Attending Private School Improve Academic Achievement? A Comparative Study of Education Performance in Shanghai Public and Private Schools. Research in Educational Development, 2019(06): 35-41.

[14] Shi S B, Ju Z Y. Remeasurement of the Capitalization Effect of Education: A Regression Discontinuity Based on "Zero School Choice" Policy For School District Housing. Nankai Economic Studies, 2022(08): 139-157+175.

[15] Bourdieu P. The Logic of Practice. Cambridge: Polity. 1980.

[16] Bhattacharya A. How Much Choice is Enough? Parental Satisfaction with Secondary School Choice in England and Scotland. Journal of Social Policy, 2023, 52(3): 661–681. https://doi.org/10.1017/S004727942100091X.

[17] Tong X. A Research on School Choice Behavior Based on Class Consciousness. Theory and Practice of Education, 2017(01): 18-21.

[18] Yu Y X, Wang Z. Does Restriction on School Selection Promote the Balanced Development of Compulsory Education? Journal of Lanzhou University of Finance and Economics, 2020(05): 32-40.

[19] Gu, X. Policy Analysis on "Nearby School Enrollment" and "School Choice" from the Perspective of Educational Equity. Journal of Western, 2022(09):126-129.

[20] Xietian Z G. Whether School Choice Can Improve Students' Academic Performance: Evidence from CEPS Data. Education & Economy, 2020(06): 85-93.

[21] Allen R, Higham R. Quasi-markets, school diversity and social selection: Analysing the case of free schools in England, five years on. 2018.

[22] Tooley J. Choice and Diversity in Education: a defence. Oxford Review of Education, 1997, 23(1): 103–116. https://doi.org/10.1080/0305498970230109.

[23] Lao K S. Viewing the Historical Transition of Education Development from the Perspective of the Right to Educational Choice. Fudan education forum, 2020, 18(4): 005–011.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3121

AI-EMPOWERED COLLEGE ENGLISH BLENDED TEACHING IN CHINA FROM THE PERSPECTIVE OF EDUCATIONAL ECOLOGY

Jun Su, LiShan Lv, ZhiYing Li*
School of Foreign Studies, South China Agricultural University, Guangzhou 510642, Guangdong, China.
Corresponding Author: ZhiYing Li, Email: azureli@163.com

Abstract: With the rapid development of information technology, especially the emergence of ChatGPT, traditional college English teaching in China can not meet college students' needs and faces a multitude of challenges, including large class sizes, teacher-centered teaching methods, lack of teacher competence in information technology, limited authentic language use, and non-diversified teaching evaluations. Therefore, based on educational ecology, AI-empowered college English blended teaching has been proposed and explored, which encompasses pre-class knowledge delivery, while-class knowledge internalization, and after-class knowledge expansion. This AI-empowered college English blended teaching model utilizes AI for online diagnostic assessments, MOOC platforms for online teaching, offline interactive classroom activities and AI feedback systems to cater to the diverse and personalized learning needs of students, thereby enhancing their English skills, maintaining the ecological balance of college English teaching system and promoting teaching effectiveness.
Keywords: College English teaching; Educational ecology; AI technology; Blended teaching

1 INTRODUCTION

Chinese College English Teaching Guide points out that college English teachers should fully leverage the important role of modern educational technology, especially modern information technology, in English teaching, and vigorously promote the deep integration of modern information technology and curriculum teaching[1]. Clearly, college English teaching should gradually expand towards intelligence, diversification, and personalization. The teacher-centered traditional college English teaching model no longer meets the needs of the new information age, and teaching reform is imperative. Constructing an AI-empowered blended teaching model for college English is an urgent task for educational transformation.

The AI-empowered blended teaching model for college English effectively integrates artificial intelligence (AI) technology into the college English blended teaching. It applies AI technology to various stages of blended teaching, including online knowledge delivery before class, offline knowledge internalization in class, and online knowledge expansion after class. For instance, it uses AI assessment and diagnostic data to accurately pinpoint student needs, employs MOOC platforms to conduct online intelligent teaching, and utilizes AI feedback systems to provide timely feedback to students. This teaching model not only captures the interest of students, today's "digital natives" , and increases their enthusiasm for learning, but also meets the diverse and personalized needs of students, helping them better master English skills.

Educational ecology posits that college English teaching is a complete language teaching ecosystem, in which ecological factors, such as teachers, students, teaching materials, teaching content, teaching methods, instructional design, teaching environment, teaching technology, and teaching assessment, interact and influence each other. The absence of any one of these ecological factors can lead to an imbalance in the entire ecosystem, thereby affecting teaching effectiveness. Only by maintaining the balance of the ecosystem can the effectiveness of classroom teaching be promoted. However, with the rapid development of AI technology, especially the emergence of ChatGPT, the ecological factor of teaching technology has brought significant impact and challenges to college English teaching, causing an imbalance in the ecosystem of college English teaching. Many teachers feel confused and at a loss, wondering how to effectively integrate AI technology into college English blended teaching to promote teaching effectiveness and maintain the ecological balance of college English teaching. Therefore, this research aims to construct an AI-empowered blended teaching model for college English from the perspective of educational ecology, which will develop specific application measures for AI technology in various ecological factors, providing clear teaching guidance and reference.

2 CHALLENGES OF TRADITIONAL COLLEGE ENGLISH TEACHING IN CHINA

In the context of globalization, English has become an indispensable skill for Chinese college students. However, traditional college English teaching in China faces a multitude of challenges that impact the effectiveness and quality of language education. These challenges are multifaceted. Below is a detailed exploration of these challenges.

2.1 Large Class Sizes

In many universities across China, college English courses for non-English majors often involve classes with over 60 students, which are widely considered large class sizes. Large class sizes restrict the interaction between teachers and students, making it difficult for teachers to provide personalized attention and tailored feedback to each student[2]. This often results in a one-size-fits-all approach to teaching, where individual learning needs and styles are not adequately addressed.

2.2 Teacher-centered Teaching Method

Traditional teaching methods, such as the grammar-translation method, direct method, audio-lingual method, essentially follow a teacher-centered teaching model. Teachers lecture, present information and demonstrate concepts and examples to students, which results in students being passive recipients of information rather than active participants in their learning process, thereby failing to mobilize their enthusiasm and initiative [3]. Students may disengage, leading to poorer learning outcomes.

2.3 Lack of Teacher Competence in Information Technology (IT)

Many college English teachers in China lack the necessary technological skills to integrate information technology (IT) into their teaching. And some teachers may be familiar with common IT tools, but they often lack technological skills in more advanced areas such as video and audio processing, network teaching platform and website design and construction[4]. This limitation restricts the richness of educational resources and methods that can be provided in college English teaching, especially with the wide application of AI technology. The ongoing professional training is needed to enhance teachers' IT skills to acquire how to integrate these skills into teaching practices.

2.4 Few Authentic Language Use

Many students have limited opportunities to engage with English in authentic contexts both inside and outside the college English classroom, which can hinder students' ability of real-life language use, so that there are phenomena of unnatural language use of Chinese students, such as dumb English, Chinglish. Besides, if there is a lack of practical application in authentic situations during the learning process, students might feel that the learning outcomes are difficult to transform into actual abilities, thereby reducing the learning enthusiasm and motivation.

2.5 Non-diversified Teaching Evaluation

Traditional evaluation in college English teaching is not diversified, focusing solely on the final exam scores, which only tests English knowledge such as vocabulary, grammar, and reading. This summative evaluation method neglects to evaluate students' active participation, enthusiasm, behavioral performance and creativity in the learning process[5], making the evaluation results not comprehensive. Besides, in college English teaching, teacher evaluation is usually the only approach of evaluation, while students' self-evaluation and peer evaluation are often overlooked. This single evaluation approach may lead to bias and unfairness in the evaluation results. Non-diversified teaching evaluation limits the comprehensive development of students' English skills, affects teaching outcomes, and hinders the improvement of teaching quality.

3 THEORETICAL FRAMEWORK: EDUCATIONAL ECOLOGY

In 1976, Lawrence A. Cremin, Dean of the Teachers College at Columbia University, combined ecology with pedagogy and formally introduced the concept of "Ecology of Education" in his book Public Education. Cremin believed that education should be viewed as an organic, complex, and unified ecosystem, with various ecological factors being organically interconnected[6]. Domestically, in 1990, Wu Dingfu and Zhu Wenyi published the first Chinese textbook Educational Ecology. The book detailed the ecological environment, ecological structure, ecological function, and assessment of education, emphasizing the interplay and mutual influence of various educational ecological environments and ecological factors on education[7]. Based on the theory of educational ecology, college English teaching is regarded as a complete language teaching ecosystem. In this system, teachers, students, teaching environment, teaching materials, teaching technology, and teaching evaluation, as ecological factors, interact and influence each other, maintaining the balance of the ecosystem and promoting the teaching effectiveness.

4 AI-EMPOWERED COLLEGE ENGLISH BLENDED TEACHING IN CHINA

The concept of blended teaching emerged as a popular pedagogical approach at the beginning of the 2000s. The term "Blend-Based learning" or "Hybrid-learning" came into widespread use around 2013[8]. Blended teaching, also known as blended learning, is an educational approach that combines traditional face-to-face classroom methods with online and digital learning activities. It's designed to leverage the strengths of both in-person instruction and technology-based learning to create a more flexible and dynamic educational experience. Based on educational ecology, the

AI-empowered college English blended teaching will implement a hybrid teaching approach that combines “online” and “offline”, encompassing pre-class, while-class, and after-class teaching stages.

4.1 Pre-class: Knowledge Delivery

There are three steps conducted during pre-class teaching stage.
The first step is to ensure teachers and students have grasped the required AI technology. Teachers and students are trained for the application of AI technology to lay the foundation for the smooth implementation of this teaching model.
The second step is to analyze the needs of students. Teachers utilize AI diagnostic assessment system, such as The UDIG Intelligent Diagnostic Assessment System, to diagnose students' college English skill levels, with teachers carefully analyzing the diagnostic data to efficiently and accurately pinpoint students’ needs, which helps to identify their strengths and weaknesses, and provides feedback and learning suggestions for both teachers and students.
The third step is for teachers to prepare teaching materials and for students to acquire pre-class online knowledge. Teachers prepare digital materials and AI-assisted exercises for students’ pre-class learning. Moreover, teachers also use AI models, such as ChatGPT, Kimi, Doubao and Gamma, to assist in determining teaching resources that meet students’ needs, formulating teaching designs and making PPT for while-class classroom instruction. They also use AI drawing and AI voice generation to prepare images, audio, and video required for teaching. On the other hand, students acquire pre-class knowledge and English skills of college English on AI-empowered teaching platform, such as Unipus (AI version). An AI digital human is employed to be learning companion to monitor, train, and provide feedback on their learning, helping to improve the efficiency of self-directed learning.

4.2 While-Class: Knowledge Internalization

During while-class teaching stage, teachers organize students to participate in classroom activities and exercises to practice the knowledge and English skills of college English acquired in the pre-class teaching stage, enabling students to fully grasp and flexibly apply the knowledge and English skills. For classroom activities, AI can intelligently divide students into different groups based on their learning characteristics, interests, and ability levels, ensuring that members within each group can collaborate and progress together. Teachers use AI classroom interaction tools, like Yu Classroom and Nearpod, to increase students’ engagement and learning outcomes. In addition, AI provides online discussion platforms and document collaboration tools to help students engage in collaborative learning more effectively.
And AI teaching assistants or virtual tutors answer students’ questions verbally and facilitate their interactions and discussions.

4.3 After-Class: Knowledge Expansion

During after-class teaching stage, AI tools, such as ChatGPT and ChatGLM, are used to enhance knowledge retrieval through natural language processing capabilities and connect information to external resources, helping students to expand their knowledge after class. And teachers also use AI technology to create homework exercises to help students consolidate their acquired knowledge and English skills. Students apply AI to practice English skills. For example, students can have an English conversation with an AI digital human to practice their oral English in Doubao. By utilizing AI tools, personalized learning paths and feedback can be provided timely by assessing students’ assignments to help students better construct knowledge. For instance, personalized English writing feedback and suggestions for improving English writing are provided by assessing students’ English essays based on AI, such as iWrite and Grammarly. Besides, educational AI agents provide after-class tutoring and Q&A services, which offer immediate answers and explanations based on students’ questions, helping them to cement knowledge into their consciousness.

5 CONCLUSION

The AI-empowered college English blended teaching in China represents a significant stride towards enhancing the educational experience and outcomes for students. This research has underscored the importance of adopting an AI-empowered blended teaching model that aligns with the principles of educational ecology, ensuring a balanced and effective college English teaching ecosystem.
The research highlights the transformative impact of AI on the educational ecosystem, particularly in the context of college English teaching. As AI continues to evolve, it is imperative for educators to keep pace with these technological advancements and integrate them effectively into their teaching practices. This will not only maintain the ecological balance of the teaching system but also enhance the overall quality of language education.
The AI-empowered college English blended teaching presents a forward-thinking approach that is responsive to the demands of the new information age. It offers a comprehensive solution to the challenges of traditional teaching methods and paves the way for a more dynamic, interactive, and personalized learning experience.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

This work is supported by Guangdong Higher Education Teaching Research and Reform/Quality Project "On the Reform of AI-empowered College English Blended Teaching from an Ecological Perspective"(YJG2024-9-514), South China Agricultural University (JG2023009); Guangdong-Hong Kong-Macao Greater Bay Area University Online Open Course Alliance (WGKM2024042); Guangdong Provincial Education Science Project (Higher Education Special Project) (2022GXJK143).

REFERENCES

[1] College Guidance Committee for Foreign Language Teaching of Higher Education Institutions in Ministry of Education. College English Teaching Guide (2020 Edition). Beijing: Higher Education Press, 2020.
[2] Liu F H. A Critique of Large Class Size and Excessive Teaching Hours for College English Teachers in College English Courses. Curriculum and Teaching Methodology, 2020, (3): 77-80.
[3] Wang J J. Application of Interactive Teaching Method in College English Teaching. In 9th International Conference on Education and Management, 2019: 842-846.
[4] Du Y X. Research on College English Teachers' Information Literacy in Information Environment. English Language Teaching, 2017, 10 (11): 37-43.
[5] Zhao W Q. Research on College English Teaching Evaluation Methods. International Journal of New Developments in Education,2023, 5(10): 85-88.
[6] Cremin L A. Public Education. New York: Basic Books, 1976.
[7] Wu D F, Zhu W Y. Educational Ecology. Nanjing: Jiangsu Education Publishing House, 1990.
[8] Oleksandra S. The History and State of Blended learning. In Preparing for the Digital university: A Review of the History and Current State of Distance, Blended, and Online Learning, 2015: 55-92.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3122

HOW DOES THE BUSINESS ENVIRONMENT EMPOWER ENTREPRENEURSHIP? ——EVIDENCE FROM CHINESE PREFECTURE-LEVEL CITIES

Jiao Zhang, ZengXiong Yang*
School of Business, Yunnan University of Finance and Economics, Kunming 650221,Yunnan, China.
Corresponding Author: ZengXiong Yang, Email: yzx418@163.com

Abstract: Optimizing the business environment and promoting entrepreneurship vigorously are crucial measures to implement the innovation-driven strategy, stimulate the vitality of market entities, and achieve high-quality economic development. Using a sample of entrepreneurship cultivation across 280 prefecture-level cities in China, based on the perspectives of the New Institutional Economics school and the Complex Systems view, and employing configurational thinking, this study employs fuzzy set qualitative comparative analysis (fsQCA) to investigate the multifaceted concurrent factors influencing entrepreneurship and the complex pathways for its cultivation. The study reveals the following findings: (1) None of the seven constituent elements within the business environment independently constitutes a necessary condition for high entrepreneurship, yet high levels of public services, financial services, and innovation environment universally contribute to fostering entrepreneurship. (2) There are three pathways to achieving high entrepreneurship: administration-assisted innovation-driven, market-driven supported by resources, and input-driven innovation-driven. (3) In cases where urban areas lack key elements or exhibit poor performance across all conditions, the cultivation and stimulation of entrepreneurship are hindered. This research enriches the understanding of antecedents influencing the formation of entrepreneurship and provides practical insights for optimizing the business environment to foster entrepreneurship.
Keywords: Entrepreneurship; Business environment; Fuzzy set qualitative comparative analysis

1 INTRODUCTION

The 19th National Congress of China emphasized the need to "stimulate and protect entrepreneurship" and "encourage more social entities to engage in innovation and entrepreneurship". Similarly, the 20th National Congress highlighted the importance of "promoting entrepreneurship" and "accelerating the development of world-class enterprises". Since entering the new era, China's economic development has shifted from pursuing high-speed growth and quantity expansion to pursuing high-quality development and qualitative enhancement. Achieving high-quality development urgently requires the active role of entrepreneurship. Despite increasing recognition and emphasis on entrepreneurs and entrepreneurship after 40 years of reform and opening up, the lifespan of new enterprises in China has shortened, and the proportion of entrepreneurial failures continues to rise [1]. Provinces across the country face the challenge of low levels of entrepreneurship and are in a state of stagnation [2]. Therefore, addressing how entrepreneurs can lead innovation-driven development and enhance the overall level of entrepreneurship in China has become a critical and pressing issue.

Institutional provision's effectiveness is crucial for fostering innovation and overcoming developmental uncertainties [3]. For entrepreneurs, effective institutional provision signifies a favorable business environment [4], which enhances their circumstances, increases their willingness to invest in R&D, and yields high levels of innovative output [5-6]. Therefore, a conducive regulatory framework is pivotal in stimulating entrepreneurship. From an institutional perspective, administrations with higher administrative management quality can facilitate entrepreneurship by providing abundant information channels, reducing unnecessary administrative interventions [7-8]. Simultaneously, establishing administrative approval centers by administrations simplifies approval processes; more standardized management reduces interaction costs between businesses and administrations, thereby enhancing individual entrepreneurial probabilities [9-10]. This decreases firms' institutional transaction costs, alleviates financing constraints, and boosts entrepreneurship [11-12].

administration economic functions, represented by administration size, primarily augment social public goods and services, thereby improving the production and operational environment for regional enterprises, further enhancing entrepreneurial supply levels[13]. However, evidence suggests that regional administration corruption not only fails to curb entrepreneurship but also stimulates entrepreneurial activities [14-15]. Regarding business environment factors, improved property rights and commercial systems enhance residents' entrepreneurial inclinations [16]. Digital technologies, owing to their social attributes, introduce uncertainty in digital innovation, thereby crucially triggering entrepreneurship [17]. Breakthroughs in communication technologies within the digital economy context foster flat organizational forms, simultaneously enlarging market information scale and lowering information acquisition costs, thus becoming a significant force in stimulating entrepreneurship [18].

Furthermore, an effective financial system enhances entrepreneurial vitality by alleviating financing constraints, risk-sharing, and promoting competition [19-20]. A robust financial ecosystem improves resource allocation efficiency

and entrepreneurship [21]. In line with the demand for financial innovation among entrepreneurs, inclusive digital finance, characterized by its digital nature, inclusiveness, and accessibility, aligns seamlessly with entrepreneurship [22-23].

Based on the above analysis, entrepreneurship has become a crucial force in promoting economic growth and achieving high-quality development in the new era. However, existing research on entrepreneurship lacks sufficient exploration of its relationship with the business environment. On one hand, current literature often discusses the role of entrepreneurship as an intermediary or moderating mechanism in the economic outcomes of the business environment. On the other hand, studies predominantly focus on the impact of individual business environment factors on innovation or entrepreneurship, overlooking the elevation to the level of entrepreneurship. This oversight neglects the concurrent causality and asymmetry between the business environment and entrepreneurship, as well as the equivalence in the formation of entrepreneurship—a complex and multifaceted process involving multiple mechanisms and pathways.Therefore, this paper aims to adopt a holistic approach guided by institutional theory and a complex systems view. Using the cultivation of entrepreneurship across 280 cities as a sample, the study employs a configurational perspective to investigate the complex and diverse entrepreneurial ecosystem shaped by the business environment. By doing so, it aims to provide theoretical foundations and practical insights for better fostering entrepreneurship and promoting high-quality economic development.

2 THEORETICAL FOUNDATIONS AND MODELS

2.1 The New Institutional Economics School and the Complex Systems Perspective

The New Institutional Economics, represented by figures such as Coase, North, and Williamson, strongly emphasizes the role of institutions in economic and social contexts. They argue that institutions, as social 'rules of the game,' encompass both external coercive and punitive rules, as well as internal self-imposed constraints, thereby constraining human behavior and guiding it towards rational expectations [24]. In contrast, the complexity theory posits that market entities characterized by high correlation, interactive adaptation, and competitive interaction often seek multiple solutions rather than optimal equilibrium in economic systems. When facing environmental changes, they engage in learning and adaptation, gradually evolving into diverse complex ecosystems.Thus, the business environment under institutional provision reflects comprehensive levels in rule of law, technology, and market aspects. However, due to differences in urban development strategies, resource endowments, and developmental stages among cities, the development of business environments across cities is asynchronous [25]. Consequently, the mechanisms and pathways for fostering entrepreneurship under these conditions are inevitably complex and diverse.

2.2 Business Environment Elements and Entrepreneurship

The term 'business environment' originates from the World Bank's 'Doing Business' survey, which considers it as the ease with which businesses can operate in various aspects such as starting a business, obtaining permits, accessing finance, and conducting operations. In recent years, domestic theoretical scholars, businesses, and administrations in China have responded sensitively to the concept of the business environment, attempting to conceptualize and localize it. On one hand, national policies have been enacted to recognize and define the business environment. For instance, in October 2019, the State Council of China issued the 'Regulations on Optimizing the Business Environment,' defining it as 'the various institutional factors and conditions that affect market entity activities in a market economy.' On the other hand, universities and research institutes have localized definitions of the business environment, extracting various constituent elements including market environment, innovation environment, and administration affairs environment.

Among the numerous elements and evaluation indicators of the business environment [26] construction of the Urban Business Environment Evaluation System has exerted significant influence. Specific elements of the business environment include public services, human resources, market environment, innovation environment, financial services, rule of law environment, and administration affairs environment.

According to Drucker, entrepreneurship involves viewing change as routine rather than exceptional on the basis of economic and social theories. He emphasizes that the essence lies not in improving what has already been done well but in doing things that are distinctive. Entrepreneurship, as a crucial source of market vitality, serves as a powerful driver for businesses to secure future success and supports achieving high-quality development. As the economy evolves and environments change, the concept of entrepreneurship has diversified. Miller suggests that it encompasses risk-taking, foresight, and product innovation. William Baumol further distinguishes entrepreneurships into innovative, imitative, non-productive, and rent-seeking types. Schumpeter views entrepreneurs as agents of creative destruction, a perspective inherited and expanded upon by Peter Drucker, who posits that innovation spirit constitutes entrepreneurship [27-28].

Despite varying interpretations among scholars regarding the specific connotations of entrepreneurship, existing literature widely acknowledges and applies innovation spirit and adventurous spirit as core components [29]. Research on the relationship between individual business environment elements and entrepreneurship has laid a foundation for understanding the business environment as an ecosystem, highlighting the synergistic impacts and mechanisms through which its constituent elements influence entrepreneurship.

2.2.1 Public services and entrepreneurship

Public services gauge the level of urban infrastructure development required for both living and production needs, including water, electricity, medical services, and natural gas. According to endogenous growth theory, higher levels of

urban public services are conducive to reducing the mobility costs of innovation factors, enhancing knowledge spillover, and accelerating technology diffusion [30]. Moreover, robust public services provide substantial support for business operations, reducing transaction costs for market entities, enhancing environmental carrying capacity, and influencing investment choices [8]. Well-developed urban infrastructure also lowers the marginal costs of operations for startup enterprises[5]. Therefore, effective public services are likely to foster and stimulate entrepreneurship.

2.2.2 Human resources and entrepreneurship

Human resources encompass the level of human capital and labor supply capabilities in urban areas. The development of innovation and entrepreneurship strategies requires talent support, and the significance of human capital is increasingly emphasized due to phenomena such as the 'Lewis Turning Point' and 'Achilles' Heel.' Existing research indicates that regional human resource levels may significantly influence innovation and entrepreneurship levels [31]. On one hand, both knowledge-based professionals with higher education and creative talents effectively contribute to the growth of urban innovation output. On the other hand, scientific and cultural talents play a promoting role in increasing residents' entrepreneurial possibilities[32]. Therefore, human resource capabilities have become a crucial force in fostering entrepreneurship in cities.

2.2.3 Market environment and entrepreneurship

The market environment primarily refers to the conditions under which urban market entities conduct business activities. A favorable market environment is a crucial driving factor for fostering entrepreneurship [33]. This is because economic activities of enterprises are inherently tied to the market as an environmental platform, and the market plays a decisive role in resource allocation. A more open market environment tends to enhance innovation efficiency [34]. Additionally, market-oriented reforms can boost urban innovation capabilities by promoting competition in product markets [35-36]. Therefore, increasing the degree of marketization significantly contributes to the cultivation of entrepreneurial innovation and entrepreneurship spirit [37].

2.2.4 Innovation environment and entrepreneurship

The innovation environment primarily measures urban innovation inputs and outputs, reflecting the city's emphasis on innovation. The innovation environment creates conditions for knowledge spillover, collaboration, and resource recycling, optimizing regional resource allocation and promoting technology diffusion. Thus, it exerts a positive influence on fostering entrepreneurship.

2.2.5 Financial services and entrepreneurship

The issue of financing constraints has long been a significant factor affecting urban innovation and entrepreneurial vitality. The development of digital finance effectively alleviates this predicament, with private and formal financial sectors complementing each other to drive entrepreneurial innovation [38]. Therefore, a sound financial environment may serve as fertile ground for nurturing entrepreneurship.

2.2.6 Legal environment and entrepreneurship

On one hand, the improvement of intellectual property protection systems not only safeguards the benefits derived from entrepreneurial innovation and business activities but also reduces risks such as exploitation and extortion encountered by entrepreneurs. On the other hand, a higher level of legal governance can also maintain and improve relations between enterprises and banks. The establishment of a credit system to some extent helps reduce discrimination by commercial banks against small and medium-sized enterprises, making it easier for enterprises to obtain financial support and alleviate funding issues associated with innovation and entrepreneurship activities [39]. A sound legal environment encourages market-oriented innovation, emphasizes intellectual property protection, and serves as a 'shield' for innovation and entrepreneurship. Strengthening the legal foundation is fundamental to cultivating a healthy and proactive entrepreneurship [40].

2.2.7 Administrative environment and entrepreneurship

The attitude of entrepreneurs towards innovation is influenced by administration interventions in the economy. Reducing micro-level administration interventions can effectively unleash entrepreneurial capabilities and enhance the vitality of market entities [41]. Unlike the Western 'night-watchman' state, local administrations in China are committed to building a proactive administration and fostering a new type of administration-business relationship. This facilitates positive interactions between administration and enterprises, providing confidence and support for entrepreneurial economic activities. Therefore, a favorable administrative environment is crucial for nurturing entrepreneurship and fostering prosperity .

2.3 Theoretical Model: Complex Paths and Mechanisms for Fostering Entrepreneurship in the Business Environment from a Group Perspective

The new institutional economics argues that institutional environment, as a form of social rules, not only constrains relationships between actors, but also influences organizational activities of individuals within society. Therefore, entrepreneurial activities of market entities are responses to institutional environments. According to the complex systems perspective, on the one hand, market entities within the same environment, highly interconnected and interactive, compete and cooperate when faced with new conditions, continually adjusting behaviors and strategies to seek more actions [42]. On the other hand, the evolution of the business environment ecosystem also significantly impacts regional entrepreneurial activities. Serving as the platform for conducting business activities, the business environment interacts with enterprises to generate agglomeration effects of talents, capital, and opportunities, providing resource support conducive to empowering innovation and entrepreneurship, and nurturing entrepreneurship [43].

Therefore, understanding how different business environment ecosystems manifest multiple configuration modes and thus create diverse pathways to foster and stimulate entrepreneurship has become an urgent issue. This paper, based on institutional theory and complex systems view, employs configuration thinking to analyze the necessary and sufficient causal relationships between business environment and entrepreneurship, aiming to uncover the complex and diverse pathways through which business environment ecosystems foster entrepreneurship, as depicted in theoretical model in Figure 1.

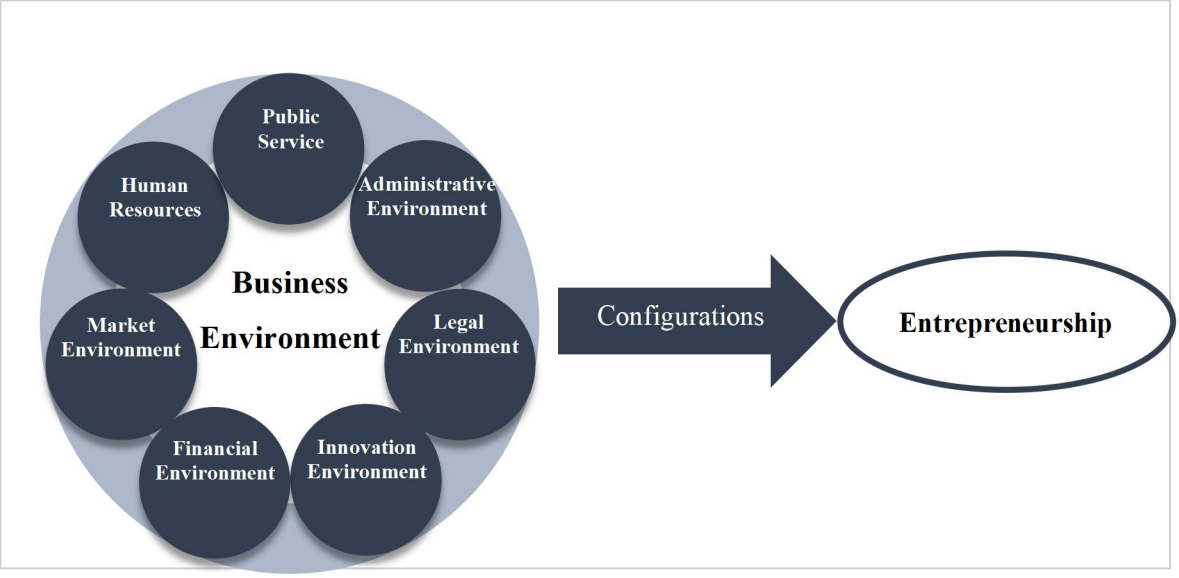

Figure 1 Theoretical Model: The Complex Path of Fostering Entrepreneurship in the Business Environment

3 RESEARCH DESIGN

3.1 Research Methodology

QCA (Qualitative Comparative Analysis) is a new method proposed by Ragin in 1987 that adopts a holistic perspective to explain necessary and sufficient causal relationships among cases using set relations and configurational effects. On one hand, QCA can handle both medium to large-scale research samples and is also suitable for small-scale research samples. On the other hand, QCA departs from traditional single-factor quantitative regression analysis, offering a new research paradigm to study how the joint effects of correlated variables influence outcomes [44]. Compared to traditional qualitative research, QCA overcomes the limitations of sample size constraints. Compared to traditional quantitative analysis, QCA method addresses the complexity of social phenomena involving multiple concurrent factors, assuming non-linear and substitutive relationships between conditions and outcome variables [45]. Therefore, QCA, as a mixed qualitative and quantitative research method based on case studies, demonstrates significant advantages in resolving issues of multiple causality.

This study selects the specific cultivation of entrepreneurship across 280 prefecture-level cities in China as its sample, discussing the complex nurturing mechanisms and pathways of entrepreneurship influenced by various components of the business environment. The study sample of entrepreneurship cultivation across 280 prefecture-level cities constitutes a large sample, offering both depth and breadth in case studies while reflecting the complexity of social realities. With 7 identified antecedent conditions, which align with the optimal number of condition variables for medium to large-scale samples, fsQCA method is chosen as more suitable.

3.2 Data Sources

Constructing and measuring specific indicators are essential components of assessing the business environment. Despite the World Bank's prior release of a comprehensive indicator framework, domestic scholars in China have conducted extensive theoretical research and practical exploration on evaluating the business environment and constructing indicator systems, yielding rich research outcomes, referencing materials such as the World Bank's 'Doing Business' report, tailored an evaluation indicator system for the business environment in China, considering the country's economic development realities. They utilized statistical data from various Chinese cities for the years 2017-2018 to measure these indicators, receiving high praise and recognition. Therefore, this study selects Chinese city-level business environment data that better aligns with China's national conditions. The business environment components chosen as antecedent conditions primarily include urban public services, human resources, market environment, innovation environment, financial services, rule of law environment, and administrative environment. Each component is further subdivided into a three-level indicator system, processed using non-dimensionalization and hierarchical weighted aggregation through scientific methods, ensuring comprehensiveness, scientific rigor, and practical applicability.

Scholars such as Schumpeter argued that entrepreneurs achieve innovation through 'recombining factors of production,' while Baumol categorized entrepreneurs into innovative and replicative types based on their economic activities. Peter Drucker, on the other hand, equated entrepreneurship with innovation. Additionally, Western scholars like Coase and Cozzi provided various perspectives on the essence of entrepreneurship. Despite divergent views in academia, innovation spirit and adventurous spirit are recognized as core components of entrepreneurship[46]. Therefore, this study defines entrepreneurship in terms of innovation and entrepreneurship. Data for this study are sourced from the Chinese Urban Database and the Chinese Urban-Rural Construction Database. Considering data availability and the temporal effects of antecedents and outcomes, all indicators related to entrepreneurship in this study are based on data from the year 2019. After matching the data accordingly, a total of 280 urban research cases were included in the sample.

3.3 Measurements And Calibrations

3.3.1 Results

Entrepreneurship primarily encompasses two core elements: innovation spirit and entrepreneurship. This study references relevant research, where innovation spirit is measured using the number of patent applications, and adventurous spirit is measured using the employment in private enterprises and individual businesses [47]. The data were normalized and weighted using the utility value method. The calculation method is as follows: Entrepreneurship = Innovation Spirit (0.5) + Adventurous Spirit (0.5).

3.3.2 Antecedent conditions

In accordance with the '2020 Evaluation of China's Urban Business Environment,' each element of the business environment serves as a primary indicator, synthesized from weighted secondary and tertiary indicators. Foundational indicators were obtained from relevant databases and normalized using the utility value method, resulting in a range of [0, 100] (Li, 2021). The measurement specifics for each element of the business environment are as follows.

(1) Public services. This indicator primarily measures the level of urban infrastructure construction. The calculation method is: Public services = Gas supply (0.25) + Electricity supply (0.25) + Medical services (0.25) + Water supply (0.25). These represent the city's capacity for gas supply, industrial electricity supply, medical and health services, and public water supply as tertiary indicators.

(2) Human resources. This indicator primarily measures the level of urban talent resources and labor force. The calculation method is: Human resources = Human resource reserves (0.7) + Labor cost (0.3). Specifically, human resource reserves include tertiary indicators such as the number of students in regular higher education institutions (0.4), the number of employees at the end of the year (0.3), and net population inflow (0.3). Labor cost is measured by the average wage level in the city.

(3) Market environment. This indicator primarily reflects the level of urban import-export, enterprise conditions, and other economic development situations. The calculation method is: Market environment = Economic indicators (0.4) + Import-export (0.3) + Enterprise structure (0.3). Specifically, economic indicators = Per capita GDP of the region (0.6) + Total fixed asset investment (0.4); Import-export indicators = Actual foreign investment used in the city in the current year (0.6) + Number of newly signed projects in the current year (0.4); and the enterprise structure indicator is measured by the number of large-scale industrial enterprises.

(4) Innovation environment. The innovation environment primarily reflects the city's input and output levels in terms of innovation, indicating the city's attention and emphasis on innovation. The calculation method is: Innovation environment = Innovation input (0.5) + Innovation output (0.5). Specifically, innovation input is measured by scientific expenditures, while innovation output is assessed using the number of invention patents granted.

(5) Financial services. Financial services measure the level of development in the city's financial industry and financing service capabilities. The calculation method is: Financial services = Financial industry employment scale (0.5) + Financing services (0.5). Specifically, the financial industry employment scale is derived from the number of financial industry personnel, while financing services are determined by the overall financing scale of the city (0.5) + scale of private financing (0.5).

(6) Rule of law environment. The rule of law environment reflects the city's security and judicial conditions. The calculation method is: Rule of law environment = Public security (0.3) + Judicial services (0.4) + Judicial transparency (0.3). Specific indicators include the number of criminal cases per 10,000 people, the number of law firms, and the judicial transparency index.

(7) Administrative environment. The administrative environment encompasses the scale of administration services and the level of administrative-business relationships. It consists primarily of administration expenditure (0.5) and administrative-business relationships (0.5), where administration expenditure is measured by general budgetary expenditures within the city, and administrative-business relationships are gauged by the business environment.

3.3.3 Calibration

Calibration in QCA methodology is an essential procedure prior to conducting necessity and sufficiency analysis, involving the assignment of set-membership scores to cases [45]. Considering the data types of condition and outcome variables, and recognizing the lack of unified standards in existing theories and research to define high and non-high levels of business environment and entrepreneurship, this study employs direct calibration to calibrate elements of the business environment and entrepreneurship to reflect relative levels across cities. Thus, this paper sets the 75th percentile, median, and 25th percentile of descriptive statistics of condition and outcome variables as anchor points

representing full membership, crossover point, and full non-membership, respectively. The use of median avoids sensitivity to outliers that might be present with mean values [46]. Additionally, to address configuration membership issues arising from condition variables having a membership degree exactly at 0.50, a commonly adopted practice subtracts a constant of 0.001 from the 0.50 membership score. Based on this approach, this paper aims to analyze complex mechanisms and pathways within the business environment that foster high entrepreneurship, drawing substantive conclusions with practical implications based on discussions of typical city cases. See Table 1 for calibration anchor points and descriptive statistics of the sample of condition and outcome variables.

Table 1 Calibration and Descriptive Statistics

Variables	Calibration			Descriptive Analysis			
	Fully in	Neither in or out	Fully out	Mean	SD	Min	Max
Entrepreneurship	7.257	3.665	1.778	7.609	12.421	0.106	94.359
Public Service	8.659	5.213	3.093	7.852	9.122	0.418	72.348
Human Resources	19.344	14.942	12.710	18.355	11.271	4.984	94.830
Market Environment	13.254	8.175	5.191	11.139	10.147	0.254	68.205
Innovation Environment	3.000	1.241	0.424	4.331	10.548	0.015	100.000
Financial Environment	3.801	2.114	1.097	4.495	9.042	0.000	100.000
Legal Environment	49.489	43.760	29.482	40.747	11.779	17.753	77.982
Administration Environment	19.485	14.362	10.549	16.645	10.932	2.219	85.558

4 ANALYSIS OF RESULTS

4.1 Necessity Analysis Of Antecedent Conditions

According to the procedures of the QCA method, prior to conducting the analysis of fuzzy set truth tables, it is necessary to check the necessity of condition variables. Necessity analysis refers to the process of verifying whether "no X, no Y" holds true, where a necessary condition indicates that the condition always exists when a specific outcome occurs, and is considered a superset of the outcome. Importantly, a necessary condition does not imply its inevitable presence in the solution, as it may be eliminated in the simplification process during truth table analysis [47]. In this study, using fsQCA 3.0 software to conduct necessity analysis of high and non-high entrepreneurship, it was found that the consistency levels of individual elements of the business environment were consistently below 0.9, indicating they do not constitute necessary conditions (see Table 2). This suggests that individual elements of the business environment have relatively weak explanatory power for entrepreneurship. Therefore, the subsequent analysis includes all elements of the business environment in fsQCA to further explore the configurations that produce high and non-high entrepreneurship.

Table 2 Analysis of the Need for a Single Element of the Business Environment

Conditions	Outcome-Entrepreneurship	
	High-ENT	Low-ENT
High Public Service	0.816	0.304
Low Public Service	0.321	0.824
High Human Resources	0.749	0.363
Low Human Resources	0.368	0.747
High Market Environment	0.790	0.331
Low Market Environment	0.356	0.806
High Innovation Environment	0.842	0.287
Low Innovation Environment	0.316	0.86
High Financial Environment	0.835	0.312
Low Financial Environment	0.318	0.831
High Legal Environment	0.657	0.426
Low Legal Environment	0.431	0.657
High Administration Environment	0.729	0.371
Low Administration Environment	0.374	0.725

4.2 Sufficiency Analysis Of Conditional Configurations

Conducting sufficiency analysis of condition configurations is central to the QCA method, primarily aimed at testing the sufficiency of different configurations of antecedent conditions for producing outcomes. When using fuzzy set

qualitative comparative analysis, three types of solutions are obtained: complex solutions without "logical remainders," parsimonious solutions that include all "logical remainders" but do not evaluate their plausibility[48], and intermediate solutions that only include conditions consistent with theoretical expectations and empirical evidence. Intermediate solutions, due to their advantage of not allowing the elimination of necessary conditions, become the primary choice for reporting and interpreting QCA method results [49]. Furthermore, the QCA method requires users to distinguish between core and peripheral conditions of configurations. A condition is considered core if it appears in both parsimonious and intermediate solutions, indicating its significant impact on the outcome. Conversely, if a condition only appears in the intermediate solution, it is deemed peripheral, contributing only marginally to the outcome .

This study sets the original consistency threshold at 0.8, the PRI (Proportional Reduction in Inconsistency) consistency threshold at 0.7, and based on sample size considerations for city cases, sets the case frequency threshold at 3 for enhancing persuasiveness and reliability of conclusions. Due to inconclusive literature regarding whether individual elements of the business environment affect entrepreneurship, this research adopts a cautious approach during counterfactual analysis, acknowledging that the presence or absence of single business environment elements may influence the cultivation and stimulation of entrepreneurship. The sufficiency analysis results of condition configurations obtained in this study are presented in Table 3.

Table 3 Conditional Grouping Sufficiency Analysis Results

Conditions	High Entrepreneurship			Low Entrepreneurship					
	HE1	**HE2**	**HE3**	**NE1**	**NE2**	**NE3**	**NE4**	**NE5**	**NE6**
Public Service	●	●	●	⊗	⊗	⊗	⊗		⊗
Human Resources		●	⊗			⊗	⊗	⊗	⊗
Market Environment	●	●	⊗	⊗	⊗			⊗	⊗
Innovation Environment	●	●	●	⊗	⊗	⊗	⊗	⊗	⊗
Financial Environment	●	●	●	⊗	⊗	⊗	⊗	⊗	
Legal Environment	⊗	●	●		⊗	⊗		⊗	⊗
Administration Environment	●		⊗	⊗			●	⊗	⊗
Consistency	0.973	0.979	0.961	0.936	0.946	0.937	0.937	0.953	0.951
Row coverage	0.194	0.457	0.088	0.510	0.439	0.402	0.195	0.355	0.353
Unique coverage	0.123	0.371	0.031	0.116	0.022	0.014	0.030	0.024	0.021
Solution consistency		0.973				0.921			
Solution coverage		0.618				0.677			

Note: ●indicates the existence of the core condition, ● indicates the existence of the edge condition, U indicates the absence of the core condition, U indicates the absence of the edge condition, and a space indicates that it is insignificant to the result.

4.2.1 Ecosystems leading to high entrepreneurship

Administration-enabled innovation-driven. Based on configuration HE1, a administration-supported innovation-driven model is depicted, where high levels of public services, market environment, financial services as well as good governance are peripheral conditions, while a high level of innovative environment stands as the core condition, and a non-high level of legal environment serves as a peripheral condition. This business environment ecology can foster high entrepreneurship. Representative cities of this configuration include Kunming, Changchun, Nanchang, Zhengzhou, Harbin, and Mianyang.

This pathway reflects that in cities where the legal environment is relatively underdeveloped, but there is strong infrastructure, good administration-business relations, and a favorable market environment conducive to investment and financing activities, market entities actively engage in innovation activities, making the city fertile ground for entrepreneurship. On one hand, the administration actively maintains market order, combats unfair competition, and promotes a harmonious and orderly market competition environment. On the other hand, the administration implements "decentralization, regulation and service" reforms, promptly responds to legitimate demands of enterprises, protects their lawful rights and interests, and strives to build a new type of administration-business relationship that is both supportive and transparent.

For example, Kunming has implemented the "Yunnan Province's Implementation Plan for Creating a Market-Oriented, Legal and International First-Class Business Environment" in 2020, focusing on efficient and harmonious market environment through initiatives such as "no need to rely on others for handling matters," "one visit handling for approvals," and other streamlined processes. In recent years, Yunnan Province has introduced policies such as the "Yunnan Province Optimizing Business Environment Regulations" and the "23 Measures to Enhance Legalized

Business Environment in Yunnan Province," aiming to create a top-tier business environment and promote market-oriented, legal, and international business environments while building and maintaining a supportive and transparent new type of administration-business relationship. Concurrently, Kunming has achieved notable progress in its innovation environment. According to data from the Kunming Science and Technology Progress and Innovation Regulation, the number of high-tech enterprises in Kunming reached 1,786 by 2022, an increase of approximately 255% from 699 in 2016. Research and development expenditures reached 12.8 billion RMB, with an annual growth rate of 9.25%. In 2022, the turnover of technology contracts reached 8.426 billion RMB, doubling over the past three years. Therefore, deeply implementing the innovation-driven development strategy and building a favorable market environment and administration-business relations are advantageous pathways to cultivating entrepreneurship and achieving high-quality economic development.

Resource-Supported Market-Driven Model.Configuration HE2 indicates that a business environment ecosystem with high human resources, high innovation environment, high financial services, and high legal environment as peripheral conditions, and high public services and high market environment as core conditions, can better cultivate and stimulate entrepreneurship. The main representative cities of this pathway include Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, Nanjing, and Hangzhou. The six cities in China that conducted pilot business environment reforms in 2021 are also included in this category.

These cities demonstrate that when urban infrastructure is well-developed, the financial industry is flourishing, and society is stable with orderly judicial systems, sufficient resource support and property protection are provided to market entities. This attracts market entities to actively invest in and establish enterprises, engage in import and export trade activities, and attract talent, further contributing to urban development.

For example, Chengdu, a leading city in western China, successfully served the fourth-largest population in the country with the seventh-largest economic output in 2022. As a pilot city for the national standardization of basic public services, Chengdu has actively innovated in the organization and supply of public services, deepening reforms, and has become the city with the highest satisfaction with public service quality in the country. In January 2023, Chengdu launched its fifth round of business environment reforms, focusing more on optimizing the market environment. This reform addresses areas such as market entry and exit, investment construction, industrial services, cross-border trade, market barriers, new regulatory frameworks, and operating costs, aiming to build a business environment led by the market and governed by industry self-discipline. Chengdu's national ranking of sixth in public service levels and eighth in market environment levels demonstrates that cities must perfect infrastructure construction, provide ample material and human resources for market entities, and focus on creating an orderly competitive market environment. Only then can entrepreneurship be effectively cultivated and stimulated, achieving the ideal of "deep water attracts fish, and strong cities attract merchants."

Input-Driven Innovation Model.According to configuration H3E, an ecosystem characterized by high public services and a high innovation environment as core conditions, the absence of a administrational environment as a core condition, and the presence of high legal environment and high financial services as peripheral conditions, along with the absence of high human resources and high market environment as peripheral conditions, can lead to high entrepreneurship. Representative cities include Xingtai, Jingzhou, and Shaoyang.

These cities demonstrate that when urban infrastructure is relatively well-developed and public services reach a considerable level, but labor reserves are lacking and market vitality is insufficient, high entrepreneurship can only be achieved through increased innovation investment. For instance, Xingtai ranks 69th nationally in public service levels and 103rd in innovation environment scores, both in the upper or upper-middle tiers. In recent years, Xingtai has accelerated the construction of an innovative city by promoting technological innovation through multiple channels, including R&D investment, park upgrades, innovation entities, innovation platforms, technological innovation, and open innovation. The city's total social R&D investment has grown by more than 10% annually, and its provincial ranking in R&D investment intensity has steadily risen. This innovation-driven approach deeply advances the coordinated development of the Beijing-Tianjin-Hebei region and accelerates the creation of a new engine for high-quality development. Therefore, in the path of optimizing the business environment, cultivating entrepreneurship, and achieving high-quality urban economic development, innovation investment is an indispensable component.

4.2.2 Ecosystems leading to low entrepreneurship

Due to the premise of causal asymmetry in QCA methodology, it is also necessary to analyze the business environment ecosystems that lead to low entrepreneurship. This study identified six configurations (NE1-NE6) associated with low entrepreneurship. A comprehensive comparison of these configurations reveals that when a city's business environment ecosystem lacks an innovation environment and financial services as core conditions, or lacks an innovation environment and public services as core conditions, it is often detrimental to the cultivation and stimulation of entrepreneurship. Additionally, when all elements of the city's business environment ecosystem perform poorly, it is challenging to foster high entrepreneurship and achieve high-quality development.

4.3 Robustness Tests

Facing the gradual development and improvement of robustness tests in QCA research, numerous methods have been proposed and applied in practice. However, given the set-theoretic nature of QCA, it is recommended to prioritize set-theoretic-specific methods for robustness testing [50]. When slight modifications in operations result in outcomes that exhibit a subset relationship, it indicates that the substantial interpretation of the research findings remains

unaffected, thus confirming the robustness of the results [51]. Based on this premise, this study employs changes in the consistency threshold to address threats posed by parameter settings and conducts robustness tests accordingly. After raising the PRI consistency from 0.7 to 0.75, it was found that the configurations obtained remained largely consistent with the existing configurations. These robustness test results confirm that the findings of this study are robust.

4.4 Heterogeneity Analysis

Due to historical path dependence, geographical environment, openness to the outside world, and cultural factors, China's economic focus has gradually shifted to the southern regions. Even at its lowest point, the economic center in the south has remained higher than that in the north and has not shifted for nearly a thousand years. Therefore, this paper conducts further heterogeneity analysis on the business environment and entrepreneurship between the southern and northern regions of China. By splitting the data of the 280 prefecture-level cities into 152 southern cities and 128 northern cities, and following the fsQCA case frequency setting principle, the case frequency was set to 2, with the original consistency threshold still at 0.8 and the PRI consistency set at 0.7. The results reveal that the paths to cultivating and stimulating entrepreneurship in the southern regions mainly resemble the administration-assisted innovation-driven type (HE1) and the resource-supported market-driven type (HE2). In contrast, the northern regions rely mainly on resource support (NHE2, NHE3, NHE4), presenting inconsistencies with the southern regions. This indicates significant differences in the business environment between northern and southern China, and the mechanisms and paths for fostering entrepreneurship also differ. Consequently, relevant administrations should fully consider regional differences and adapt to local conditions when creating a favorable business environment (See Table 4 and 5).

Table 4 Results of the Northern Cities Conditional Grouping Sufficiency Analysis

Conditions	High Entrepreneurship					Low Entrepreneurship				
	NHE 1	NHE2	NHE3	NHE4	NHE5	NNE1	NNE2	NNE3	NNE4	NNE5
Public Service	⊗	●	●	●	●	⊗	⊗		⊗	⊗
Human Resources	⊗	●		●	●		⊗	⊗	⊗	●
Market Environment	●		●	●	●	⊗	⊗	⊗	⊗	●
Innovation Environment	●	●	●	●	●	⊗	⊗	⊗	⊗	⊗
Financial Environment	⊗	●	●	●	⊗	⊗	⊗	⊗		⊗
Legal Environment		●	●		⊗			⊗	⊗	⊗
Administrative Environment	⊗	⊗	⊗	●	⊗	⊗		⊗	●	●
Consistency	0.917	0.974	0.996	0.980	0.945	0.948	0.936	0.955	0.910	0.925
Row coverage	0.129	0.147	0.167	0.499	0.068	0.495	0.543	0.340	0.188	0.067
Unique coverage	0.043	0.016	0.012	0.418	0.015	0.062	0.068	0.018	0.025	0.020
Solution consistency	0.966					0.932				
Solution coverage	0.673					0.669				

Note: ●indicates the existence of the core condition, ● indicates the existence of the edge condition, U indicates the absence of the core condition, U indicates the absence of the edge condition, and a space indicates that it is insignificant to the result.

Table 5 Results of the Southern Cities Conditional Grouping Sufficiency Analysis

Conditions	High Entrepreneurship				Low Entrepreneurship			
	SHE1	SHE2	SNE1	SNE2	SNE3	SNE4	SNE5	SNE6
Public Service	●	●		⊗	⊗	⊗	⊗	●
Human Resources		●	⊗		⊗	⊗		⊗
Market Environment	●	●	⊗	⊗	⊗		●	●
Innovation Environment	●	●	⊗	⊗		⊗	⊗	⊗
Financial Environment	●	●	⊗	⊗	⊗	⊗	⊗	●
Legal Environment		●	⊗	⊗	●	⊗	●	●
Administrative Environment	●		⊗	⊗	⊗	●	⊗	●

Consistency	0.978	0.982	0.950	0.945	0.951	0.935	0.974	0.977
Row coverage	0.182	0.517	0.373	0.405	0.243	0.168	0.127	0.070
Unique coverage	0.104	0.439	0.019	0.049	0.074	0.044	0.023	0.018
Solution consistency		0.981			0.931			
Solution coverage		0.621			0.632			

Note: ●indicates the existence of the core condition, ● indicates the existence of the edge condition, U indicates the absence of the core condition, U indicates the absence of the edge condition, and a space indicates that it is insignificant to the result.

5 CONCLUSIONS AND INSIGHTS

5.1 Conclusions Of The Study

Optimizing the business environment and promoting entrepreneurship have become focal points of research for fostering economic growth and achieving high-quality development. This paper examines the cultivation and stimulation of entrepreneurship in 280 prefecture-level cities in China. Guided by institutional economics and complex systems theory, and from the perspective of the business environment, this study employs configurational thinking and the QCA method to deconstruct the multiple concurrent factors and complex causal mechanisms that lead to differences in the cultivation and stimulation of entrepreneurship. Specifically, this analysis focuses on seven conditional variables: public services, human resources, market environment, innovation environment, financial services, legal environment, and administration environment. The study identifies multiple pathways within the business environment ecosystem that better cultivate and stimulate entrepreneurship.

First, this paper, through necessity analysis, finds that none of the seven specific elements of the business environment ecosystem can independently constitute the necessary condition for cultivating entrepreneurship, indicating that a single element of the business environment is insufficient to explain the stimulation of entrepreneurship. However, by comparing the three pathways that better cultivate and stimulate entrepreneurship, it is found that improving the level of urban public services, actively promoting the development of the financial industry, and optimizing the urban innovation environment play a universal role in promoting entrepreneurship.

Second, the configurational analysis reveals three types of business environment ecosystems that lead to high levels of entrepreneurship: administration-assisted innovation-driven, resource-supported market-driven, and investment-driven innovation. On one hand, these findings indicate that there is no single path to cultivating and stimulating entrepreneurship in cities; on the other hand, they reflect different mechanisms at various stages of urban development for fostering entrepreneurship.

Finally, the six configurations associated with low entrepreneurship indicate that when cities lack innovation environments, financial services, or public services, or when the overall development level of various elements in the urban business environment ecosystem is poor, the vitality of market entities cannot be stimulated, nor can entrepreneurship be promoted. This also reflects the causal asymmetry in the factors leading to differences in urban entrepreneurship.

5.2 Theoretical Contributions

The contributions of this study can be summarized as follows:

First, drawing on perspectives from the new institutional economics and complex systems theory, this paper comprehensively considers combinations of business environment elements that promote entrepreneurship. Utilizing configurational analysis, it reveals the complex pathways and mechanisms for nurturing entrepreneurship, identifying convergent paths where the business environment empowers entrepreneurship. This enriches theoretical understanding in the field of entrepreneurship.

Second, previous studies often focused on single elements representing the business or institutional environment in relation to entrepreneurship, neglecting the complexity of the business environment as a system. This study takes a holistic approach, integrating considerations of the complex business environment system's impact on entrepreneurship. It provides a novel perspective for research on the relationship between business environment and entrepreneurship, addressing gaps in previous studies.

Third, based on configurational analysis, this study uncovers diverse business environment ecosystems conducive to entrepreneurship formation, thereby elucidating the "black box" of how business environments foster entrepreneurship.

Lastly, this paper contributes to the empirical support for understanding the heterogeneity of entrepreneurship across northern and southern regions of China, offering insights for stimulating entrepreneurship in urban settings.

5.3 Implications For Practice

5.3.1 Systematic perspective and holistic thinking

Unlike previous studies that focused on the impact of a single business environment factor on entrepreneurship, this study reveals that nurturing and stimulating entrepreneurship requires an effective ecosystem of multiple business environment factors. According to the configuration paths that lead to high entrepreneurship, it is clear that activating entrepreneurship necessitates the synergistic interaction of various business environment factors. Thus, policy-making

should adopt a systematic perspective, foster holistic thinking, and coordinate business environment factors to avoid neglecting any crucial elements.

5.3.2 Targeted efforts and focused action

The research results indicate that the effectiveness of fostering entrepreneurship is influenced by a combination of various business environment factors, with different configurations achieving the same goal. Considering objective realities such as resource levels, cities should prioritize business environment factors that universally impact the cultivation of entrepreneurship, such as the innovation environment and the development level of financial services. This will provide favorable conditions for stimulating the vitality of market entities.

5.3.3 Localized solutions and active exploration

Although the research identifies multiple paths and driving mechanisms for nurturing and stimulating entrepreneurship, it does not imply that these paths are suitable for all cities, nor does it suggest that the mechanisms identified in this study are the only ones. Therefore, cities should explore new paths and mechanisms for fostering entrepreneurship in accordance with their unique characteristics and resource endowments, creating city-specific approaches to cultivating entrepreneurship and achieving high-quality economic development.

5.4 Research Limitations And Prospects

This study has several limitations. Firstly, it employs only static data; future research could incorporate temporal factors and utilize Temporal Qualitative Comparative Analysis (TQCA) for deeper analysis. Secondly, the business environment is a complex ecosystem comprising multiple factors. Future research could further refine and consider the specific elements of the business environment.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

The authors gratefully thank the financial support provided by the National Natural Science Foundation of China (Grant No. 72164038) and Yunnan Provincial Department of Education Scientific Research Fund Graduate Project (Project Number: 2024Y523).

REFERENCES

[1] Zhang Yuli, Xie Wei. Reform and Opening-up, Entrepreneurship, and Entrepreneurial Spirit. Nankai Business Review, 2018, 21(05): 4-9.

[2] Xue Jun, Wei Nannan. A Study on Regional Differences in Entrepreneurship from the Perspective of the Business Environment. Operations Research and Management Science, 2023, 32(09): 234-239.

[3] Lin Yaopeng, Lin Liulin. Institutional Supply, Entrepreneurial Spirit, and Regional Innovation. Technology Economics and Management Research, 2022, (01): 61-66.

[4] China Entrepreneur Survey System, Zhong Weiguo, Li Lan, et al. Enterprises Entering an Active Innovation Phase: Report on China's Enterprise Innovation Trends—2016 Special Survey Report on the Growth and Development of Chinese Entrepreneurs. Management World, 2016, (06): 67-78. DOI: 10.19744/j.cnki.11-1235/f.2016.06.006.

[5] Kong Lingchi. Institutional Environment, Entrepreneurial Spirit, and High-Tech Industry Agglomeration. China Economic Problems, 2020, (02): 16-29. DOI: 10.19365/j.issn1000-4181.2020.03.02.

[6] Long Haijun. The Impact of the Institutional Environment on the Allocation of Entrepreneurial Spirit: The Moderating Role of the Financial Market. Science & Technology Progress and Policy, 2017, 34(07): 94-99.

[7] Zhang Min. A Study on the Impact of the Business Institutional Environment on Entrepreneurial Spirit—Taking China's Local Administrative Approval Reforms as an Example. Journal of Central University of Finance & Economics, 2021, (06): 90-103. DOI: 10.19681/j.cnki.jcufe.2021.06.009.

[8] Li Lan, Zhong Weiguo, Peng Siqing, et al. Contemporary Entrepreneurial Spirit: Characteristics, Influencing Factors, and Policy Recommendations—2019 Special Survey Report on the Growth and Development of Chinese Entrepreneurs. Nankai Business Review, 2019, 22(05): 4-12+27.

[9] Wang Xiaoli, Ma Lijun. A Study on the Impact of administration Regulation on Entrepreneurial Spirit—Based on Panel Data from 30 Provinces. Journal of Tongji University (Social Science Section), 2019, 30(02): 107-117.

[10] Chen Gang. Regulation and Entrepreneurship—Micro Evidence from China. Management World, 2015, (05): 89-99+187-188. DOI: 10.19744/j.cnki.11-1235/f.2015.05.009.

[11] Shao Chuanlin. Institutional Environment, Property Rights, and Entrepreneurial Spirit—Empirical Evidence from Chinese Industrial Enterprises. Securities Market Herald, 2015, (03): 20-25+38.

[12] Zheng Peng. Can Administrative Approval System Reforms Enhance Entrepreneurial Spirit?. Journal of Nanjing University of Finance and Economics, 2022, (03): 44-54.

[13] Zeng Cheng, Li Yuanxu. Discussing the Entrepreneurial Spirit Driving Economic Growth Transition—An Empirical Study Based on Provincial Panel Data in China. Shanghai Economic Review, 2017, (10): 81-94. DOI: 10.19626/j.cnki.cn31-1163/f.2017.10.008.

[14] Yan Weimin, Shao Chuanlin, Pei Zhiwei. Regional Corruption, Financial Marketization, and Entrepreneurial Spirit—Empirical Evidence at the Provincial Level in China. Contemporary Economic Management, 2015, 37(04): 91-97. DOI: 10.13253/j.cnki.ddjjgl.2015.04.016.
[15] Li Houjian. Marketization, Corruption, and Entrepreneurial Spirit. Economic Science, 2013, (01): 99-111. DOI: 10.19523/j.jjkx.2013.01.009.
[16] Zhang Weidong, Xia Lei. The Impact of the Business Environment on Mass Entrepreneurship—Evidence from Business System Reforms. Reform, 2020, (09): 94-103.
[17] Zhao Donghui, Sun Xinbo, Qian Yu, et al. The Emergence of Entrepreneurial Spirit in the Digital Age: A Grounded Study Based on Multiple Cases. China Human Resource Development, 2021, 38(07): 92-108. DOI: 10.16471/j.cnki.11-2822/c.2021.7.007.
[18] Chen Mingming, Zhang Wencheng. Research on the Mechanism of Digital Economy's Impact on Economic Growth. Social Sciences, 2021, (01): 44-53. DOI: 10.13644/j.cnki.cn31-1112.2021.01.006.
[19] Zhang Meiling, Chen Yongqin. Analysis of the Factors Influencing Entrepreneurial Spirit and Policy Implications. Modern Management Science, 2015, (07): 12-14.
[20] Hu Sai. An Empirical Analysis of the "Crowding-Out Effect" of Financing Constraints on Entrepreneurial Spirit—From the Perspective of Enterprise Export Competitiveness. Zhejiang Academic Journal, 2018, (04): 118-127. DOI: 10.16235/j.cnki.33-1005/c.2018.04.014.
[21] Zheng Jinhui, Xu Weixiang, Liu Chengjun. Digital Finance, Entrepreneurial Spirit, and the High-Quality Development of the Private Economy in the Yangtze River Delta. Collected Essays on Finance and Economics, 2023, (05): 47-56. DOI: 10.13762/j.cnki.cjlc.2023.05.007.
[22] Han Liangliang, Peng Yi. Digital Inclusive Finance, Business Environment, and Entrepreneurial Spirit—Empirical Evidence from 281 Cities in China. Journal of Management, 2023, 36(03): 49-67. DOI: 10.19808/j.cnki.41-1408/F.2023.0024.
[23] Cheng Enfu, Xu Huiping. The Causes, Characteristics, and Overall Evaluation of the New Institutional Economics—An Observation from the Perspective of Shanghai School Economics. Contemporary Economic Research, 2004, (09): 22-27+73.
[24] Du Yunzhou, Liu Qiuchen, Chen Kaiwei, et al. Business Environment Ecology, Total Factor Productivity, and Multi-Mode Urban High-Quality Development—A Configuration Analysis Based on Complex Systems Theory. Management World, 2022, 38(09): 127-145. DOI: 10.19744/j.cnki.11-1235/f.2022.0123.
[25] Li Zhijun. Evaluation and Comparative Study of the Business Environment in Major Urban Clusters in China. Journal of Beijing Technology and Business University (Social Sciences), 2021, 36(06): 17-28.
[26] Li Zhijun, Zhang Shiguo, Li Yifei, et al. Evaluation of the Business Environment in Chinese Cities and Relevant Suggestions. Jiangsu Social Sciences, 2019, (02): 30-42+257. DOI: 10.13858/j.cnki.cn32-1312/c.2019.02.005.
[27] Bai Shaojun, Cui Mengxiao, Geng Zizhen. A Literature Review on Innovation and Entrepreneurial Spirit. Science & Technology Progress and Policy, 2014, 31(23): 178-182.
[28] Ma Zhongxin, Tao Yitao. The Impact of Entrepreneurial Spirit on Economic Growth. Economic Trends, 2019, (08): 86-98.
[29] Liu Binglian, Wu Peng, Liu Yuhai. Transportation Infrastructure and the Growth of Total Factor Productivity in China—A Spatial Panel Econometric Analysis Based on Provincial Data. China Industrial Economics, 2010, (03): 54-64. DOI: 10.19581/j.cnki.ciejournal.2010.03.005.
[30] Sheng Mingquan, Li Zhijie, Bao Qun. Business Environment Ecology and the Improvement of Regional Innovation Performance—A Linkage Analysis Based on QCA and NCA. Journal of Yunnan University of Finance and Economics, 2023, 39(08): 22-37. DOI: 10.16537/j.cnki.jynufe.000882.
[31] Hu Shuang, Zhu Qigui. What Kind of Talent Promotes Urban Entrepreneurial Spirit?. Investment Research, 2021, 40(01): 72-92.
[32] Yuan Xiaoling, Li Zhengda, Bai Tianyuan. Entrepreneurial Spirit and EVA Performance Based on the Moderation of Market Environment. Journal of Xi'an Jiaotong University (Social Sciences), 2012, 32(03): 36-42. DOI: 10.15896/j.xjtuskxb.2012.03.013.
[33] Wang Pengcheng, Gao Nan. Social Responsibility Information, Market Attention, and Capital Costs—Empirical Research Based on Private Listed Companies. Technology Economics and Management Research, 2017, (10): 67-71.
[34] Zhuang Xudong, Wang Renzeng. Marketization Process, Digital Transformation, and Regional Innovation Capability—Theoretical Analysis and Empirical Evidence. Science & Technology Progress and Policy, 2022, 39(07): 44-52.
[35] Han Lei, Wang Xi, Zhang Baowen. Has the Marketization Process Driven Entrepreneurial Spirit?. Research on Financial Problems, 2017, (08): 106-113.
[36] Chen Huan, Zhuang Shangwen, Yin Jingjing. Market Reforms, Entrepreneurial Spirit, and High-Quality Economic Development. Statistics and Decision Making, 2022, 38(07): 166-170. DOI: 10.13546/j.cnki.tjyjc.2022.07.033.
[37] Li Jian, Guan Yu, Dai Yunhao. Financial Mismatch and Enterprise Technological Innovation—Empirical Evidence from Chinese Listed Companies. Journal of Central University of Finance & Economics, 2023, (10): 25-39. DOI: 10.19681/j.cnki.jcufe.2023.10.006.
[38] Chen Yian, Zhao Xueping. Institutional Environment and Entrepreneurial Spirit: Mechanisms, Effects, and Policy Research. Science Research Management, 2019, 40(05): 90-100. DOI: 10.19571/j.cnki.1000-2995.2019.05.009.

[39] Xu Hang. Cultivating and Protecting Entrepreneurial Spirit through the Rule of Law. People's Forum, 2017, (33): 100-101.
[40] Ran Maosheng, Chen Liang, Li Wanli. Economic Uncertainty, Entrepreneurial Spirit, and Firm Performance. China Management Science, 2022, 30(11): 49-58. DOI: 10.16381/j.cnki.issn1003-207x.2022.11.005.
[41] Hou Guanyu. The Impact of Business Environment on Employment and the Improvement Path—A Fuzzy Set Qualitative Comparative Analysis Based on 30 Provinces in China. Henan Social Sciences, 2023, 31(05): 63-72.
[42] Zhu Xiumei, Pei Yu, Fei Yupeng, et al. Formation and Mechanism of Team Entrepreneurial Passion. Foreign Economics & Management, 2021, 43(01): 121-135. DOI: 10.16538/j.cnki.fem.20200918.401.
[43] Dun Shuai, Mao Junquan. How Does the Business Environment Drive the Development of "Specialized and New" SMEs?—A Configurational Perspective of Qualitative Comparative Analysis. Journal of Shanghai University of Finance and Economics, 2023, 25(02): 78-92. DOI: 10.16538/j.cnki.jsufe.2023.02.006.
[44] Du Yunzhou, Jia Liangding. A Configurational Perspective and Qualitative Comparative Analysis (QCA): A New Path in Management Research. Management World, 2017, (06): 155-167. DOI: 10.19744/j.cnki.11-1235/f.2017.06.012.
[45] Greckhamer T, Misangyi V F, Fiss P C. Chapter 3 The Two QCAs: From a Small-N to a Large-N Set Theoretic Approach//Configurational Theory and Methods in Organizational Research. Emerald Group Publishing Limited, 2013: 49-75.
[46] Crilly D, Zollo M, Hansen M T. Faking it or Muddling Through? Understanding Decoupling in Response to Stakeholder Pressures. Academy of Management Journal, 2012, 55(6): 1429-1448.
[47] Cheng Jianqing, Luo Jinlian, Du Yunzhou, et al. When Do Institutional Environment and Psychological Cognition Activate Entrepreneurship?—A Study Based on the QCA Method. Science of Science and Management of S&T, 2019, 40(02): 114-131.
[48] Rihoux B, Ragin C C. Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques. Thousand Oaks: Sage, 2009.
[49] Ragin C C. Redesigning Social Inquiry: Fuzzy Sets and Beyond. Chicago: University of Chicago Press, 2008.
[50] Van Stel A, Storey D J, Thurik A R. The Effect of Business Regulations on Nascent and Young Business Entrepreneurship. Small Business Economics, 2007, 28: 171-186.
[51] Geissinger A, Laurell C, Sandström C, et al. Digital Entrepreneurship and Field Conditions for Institutional Change—Investigating the Enabling Role of Cities. Technological Forecasting and Social Change, 2019, 146: 877-886.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3123

INNOVATIVE TEACHING IN ENVIRONMENTAL DESIGN WITH A FOCUS ON "INTEGRATION OF THEORY AND PRACTICE, REALIZATION OF SITUATIONAL LEARNING" IN THE CONTEXT OF DIGITAL INFORMATIZATION

JunLing Zhou, ZiChuan Liu*, YiTong Guo, WeiRan Lin
College of Fine Arts, Guangdong Polytechnic Normal University, Guangzhou, 510260, China
Corresponding Author: ZiChuan Liu, Email: 2687065168@qq.com

Abstract: This paper investigates the innovative application of digital information technology in the environmental design profession, "the integration of science and reality, the realization of the context" teaching mode. With the rapid development of information technology, the application of digital informationization in the field of environmental design is becoming more and more extensive, which brings new opportunities and challenges for teaching. As an important base for cultivating environmental design talents, Guangdong Normal University of Technology has actively explored and implemented this teaching mode. Through the introduction of virtual reality (VR), augmented reality (AR), three-dimensional modeling and other advanced technologies, design theory and practical operation are closely integrated to effectively improve the level of informatization and the ability of students to apply digital technology. At the same time, the school has established a rich digital teaching resource library, using virtual teaching and research and hybrid teaching mode, realizing the organic combination of online and offline teaching. In addition, the school also pays attention to the application of contextual realization in environmental design teaching, through virtual space design, interdisciplinary workshops, school-enterprise cooperation and project practice, etc., to cultivate students' practical ability and innovation ability. This paper analyzes the teaching practice cases of Guangdong Normal University of Technology, summarizes the effectiveness of digital informatization teaching in the environmental design profession, and looks forward to the future development direction.
Keywords: Environmental design major; Digital informatization; Integration of science and practice; Contextual realization; Pedagogical innovation

1 INTRODUCTION

As a multidisciplinary and applied discipline, environmental design integrates the knowledge of art, architecture, material, environment and psychology, etc. With the rapid development of information technology, the application of digital information technology in environmental design has become more and more widespread, which brings new opportunities and challenges for environmental design teaching. With the rapid development of information technology, the application of digital informationization in environmental design is becoming more and more extensive, which brings new opportunities and challenges for environmental design teaching. As an important base for cultivating environmental design talents, Guangdong Normal University of Technology is actively exploring the teaching mode of digital informatization, which aims to improve students' informatization level and ability of digital technology application, and to cultivate professionals who can adapt to the needs of modern design industry.

2 AN OVERVIEW OF THE INTEGRATED TEACHING AND LEARNING MODEL

Integrated teaching of theory and practice is a teaching method that closely integrates theory and practice, which breaks the situation that theory and practice are separated from each other in traditional teaching In this mode of teaching, the teaching process is relatively centralize [1]. In this teaching mode, the teaching process is relatively centralized, and both teachers and students teach, learn and do, promoting and improving each other. In the environmental design profession, the application of the integrated teaching mode can help students better understand and master the design theory, while improving their practical ability.

Guangdong Normal University of Technology actively implements the integrated teaching mode of science and practice in the environmental design program, which closely combines design theory and practical operation through the introduction of advanced digital technology and equipment, such as Virtual Reality (VR), Augmented Reality (AR), 3D modeling, etc. Students can not only learn design principles and methods, but also deepen their understanding and application of the theory through practical operation in the classroom. Students can not only learn design principles and methods in the classroom, but also deepen their understanding and application of theories through practical operation.

3 DIGITAL INFORMATICS IN THE TEACHING OF ENVIRONMENTAL DESIGN

3.1 The Creation of a Digital Teaching Resource Library

Guangdong Normal University of Technology has actively integrated high-quality teaching resources and established a rich digital teaching resource library. These resources include teaching courseware, case library, video tutorials and so on, covering all aspects of environmental design. Students can access these resources at any time through the online platform for independent and extended learning. At the same time, teachers can also utilize these resources for class preparation and teaching to improve the teaching effect.

3.2 Virtual Teaching and Learning and Hybrid Teaching Models

Guangdong Technical Normal University adopts virtual teaching and research and hybrid teaching mode, realizing the organic combination of online and offline teaching. Through virtual teaching and research, teachers can teach and communicate remotely, and students can learn anytime and anywhere [2]. At the same time, the school also introduced a hybrid teaching mode, combining online teaching and offline practice, so that students can master the theoretical knowledge, at the same time, practical operation and project practice.

3.3 Big Data Technologies in the Evaluation of Teaching and Learning

Guangdong University of Technology utilizes big data technology for teaching evaluation, which realizes comprehensive monitoring and analysis of students' learning process. By collecting students' learning data, teachers can understand students' learning progress, mastery and learning effect, so as to provide targeted guidance and adjustment [3]. At the same time, the school has also established a comprehensive teaching evaluation system, including student evaluation, teacher evaluation, peer evaluation and other aspects, to ensure that the quality of teaching and learning continues to improve.

4 CONTEXTUAL REALIZATION IN THE TEACHING OF ENVIRONMENTAL DESIGN

4.1 Virtual Space Design and Practice

The teaching of environmental design emphasizes the application of virtual space design and practice. By utilizing virtual reality technology, students can create their own virtual space for design and planning [4]. This teaching method not only breaks through the spatial limitation of traditional teaching, but also improves students' design ability and innovation ability. At the same time, students can also communicate and share through the virtual space to promote mutual learning and progress.

4.2 Interdisciplinary Workshops and Seminars

Through exchanges and cooperation with other disciplines, interdisciplinary workshops and seminars are actively organized to provide students with diversified learning opportunities. Students can broaden their horizons and ways of thinking and improve their problem-solving abilities. At the same time, workshops and seminars also provide students with practical opportunities to learn and grow by doing.

4.3 School-Enterprise Cooperation and Project Practice

By participating in actual projects of enterprises, we have established close cooperative relationships with many design enterprises and companies to provide students with internship and employment opportunities. Students can learn about the latest news and technology trends in the design industry and improve their practical ability and professionalism. Meanwhile, the school also carries out scientific research projects and teaching activities with enterprises to promote the integrated development of industry-university-research.

5 A CASE STUDY OF PEDAGOGICAL INNOVATION - THE TEACHING PRACTICE OF ENVIRONMENTAL DESIGN AT GUANGDONG UNIVERSITY OF TECHNOLOGY AND NORMALISM,

5.1 Integration of Digital Technologies with Environmental Design Courses

Guangdong Normal University of Technology actively integrates digital technology, such as three-dimensional modeling and virtual reality, into the environmental design courses. Through the application of these technologies, students can understand the design principles and methods more intuitively and improve their design ability and innovation [5]. At the same time, digital technology can also help students to carry out more accurate design calculations and simulation analysis to improve the accuracy and reliability of the design.

5.2 Hands-on Teaching with a Project-Driven Instructional Model that

We emphasize the application of practical teaching and project-driven teaching mode. By cooperating with enterprises to carry out actual projects, students can participate in the whole process of the project, from demand analysis, design planning to construction management and other aspects. This teaching method not only improves students' practical ability, but also lets them learn how to cooperate with team members, how to solve problems and other professional

qualities in practice [6].

5.3 Interdisciplinary Cooperation and Academic Exchanges

As shown in Figure 1, interdisciplinary cooperation and academic exchange activities are actively organized. Through exchanges and cooperation with other disciplines, students can understand the knowledge and technology trends in different fields and broaden their horizons and ways of thinking. At the same time, academic exchanges can also provide students with opportunities to show their achievements and promote mutual learning and progress.

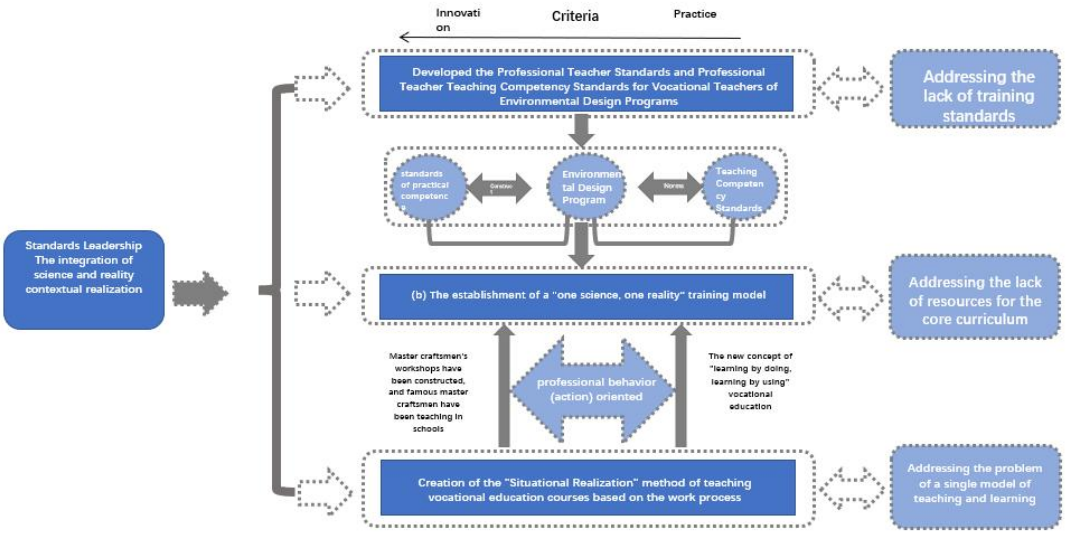

Figure 1 "Criteria Leadership, Integration of Science and Reality, and Contextual Realization"The Construction of Personnel Training System and Practice Training Mode of VET Teachers of Environmental Design Profession

6 IMPLEMENTATION PLAN AND METHODOLOGY OF "INTEGRATION OF SCIENCE AND REALITY, CONTEXTUAL REALIZATION" OF DIGITAL INFORMATIZATION

6.1 The Three-Dimensional Characterization of Digital Informatics Teaching and Learning

The process shows the three-dimensional characteristics of digital information technology integration teaching in environmental art design, aiming to stimulate students' learning interest and improve their professional skills through multi-dimensional technical means. Specific measures include.

6.1.1 BIM skills training

The introduction of BIM (Building Information Modeling) technology and professional skills training can significantly improve the practicality and relevance of teaching. This technology allows information to be visualized in three dimensions, closer to the real environment. Through BIM skills training, students can not only master advanced design modeling skills and construction management skills, but also enable them to better adapt to the development trend of information technology in the construction industry, laying a solid foundation for their future careers.

6.1.2 VR practical Training Workshop and VR Virtual Reality Training Room Construction

Through VR technology, building virtual reality training room and organizing workshop activities, students can practice and experiment in the virtual environment, can visualize the performance of their designs in the virtual space, make timely adjustments and optimize their designs. In addition, VR training workshop and virtual reality training room also provide a safe environment for students to learn how to deal with the challenges in the actual design scenarios without risk, and experience the design environment immersively, so as to improve students' spatial perception ability, enhance innovative thinking, and better understand and grasp the project teaching [7].

6.1.3 Online platforms and mobile applications

By using online learning platforms such as Study Pass, WeChat groups and various mobile APPs, teachers can effectively organize classroom teaching activities and link up all aspects of teaching. Students can access learning resources and participate in interactive discussions more conveniently. Through APP tools for daily classroom organization, task release, interactive Q&A, class management and grade management, etc., making teaching more convenient and efficient, realizing the seamless connection of online and offline teaching resources, and ensuring the coherence and completeness of teaching content.

Figure 2 Enterprise Participation in Curriculum Development

This figure 2 shows a practical case in which representatives of MARS Bright City Software participated in the construction of the course and explored the combination of the VR training room and the course, reflecting the specific application of digital informatization teaching in the environmental art design profession.

6.2 "Two-Teacher" Collaborative Education

In order to further improve the quality of teaching, we have adopted a "dual-teacher" approach to collaborative education, i.e., teachers from the school and mentors from enterprises participate in teaching together. Specific measures include.

6.2.1 Organization of short-term workshops

By cooperating with enterprises and organizing a large number of short-term workshops, we have incorporated the latest industry knowledge and practical experience into teaching, and actively promoted the reform of the environmental design major in terms of teaching materials, teaching methods and teaching staff. Students are guided by "dual-teachers" to carry out workshop activities, so as to gain valuable real experience.

6.2.2 Introducing part-time teachers

We invite a number of renowned designers in the field of environmental design as part-time teachers to supplement and enrich the content of the course, and ensure that students are exposed to cutting-edge knowledge and skills and broaden their academic horizons under the guidance of renowned teachers. At the same time, the design application and technology are both "science and practice as a whole", consolidating what they have learned in practice, and providing students with practical knowledge and theories that are close to the needs of the industry.

6.3 School-Enterprise Cooperation Feeds

In order to better adapt to the market demand and development trend, we have completed the construction of school-enterprise deep integration of BIM professional and technical training course system based on the concept of "one theory and one reality, realizing the situation", and constructed a three-dimensional evaluation system to promote the cultivation and training of composite technical and skilled personnel. Specific measures include.

6.3.1 Building a system of practical training courses

Closely focusing on the market demand, we have carried out in-depth cooperation and exchanges with a number of well-known enterprises, and developed the BIM professional and technical practical training course system [8]. Through this move to develop a set of teaching requirements and close to the market demand of the course system to ensure that the practicality and foresight of the BIM professional and technical training course system.

6.3.2 Building a three-dimensional evaluation system

In assessing students' learning outcomes, diversified evaluation methods are adopted to ensure the objectivity and comprehensiveness of the evaluation. Evaluation methods include enterprise evaluation, teacher evaluation, students' self-assessment and mutual evaluation, etc., in order to form a three-dimensional evaluation system and understand students' learning situation from multiple angles, so as to provide them with more accurate and personalized teaching guidance.

6.3.3 Training and certification of personnel in pilot enterprises

Since 2021, we have been actively responding to the needs of enterprises and accepting enterprise personnel to come for training and certification on a pilot basis. At the same time, it also provides a strong support and opportunity for our school to export professional talents to enterprises, realizes the feedback of school-enterprise cooperation to enterprises, and lays a solid foundation for the deep cooperation between our school and enterprises.

6.4 Market Demand Oriented

In order to better serve the local economic development and industry needs, we take the market demand as the guide,

build a digital information cooperation platform, improve the quality of talent training, and promote the employment of students. Specific measures include.

6.4.1 Building a platform for cooperation

Actively cooperate with schools, enterprises and other parties to build a digital information cooperation platform to promote information sharing, resource complementation and mutual benefit. With the power of the platform, it opens the way for professional services for local development.

6.4.2 Improving the quality of talent development

We actively adopt school-enterprise cooperation, industry-university-research combination and other ways to improve students' professional skills and comprehensive quality. At the same time, focusing on cultivating students' sense of innovation, encouraging students to actively participate in various project activities, and cultivating a group of high-quality talents with both solid professional knowledge and high comprehensive quality to meet the market demand and the needs of industry development.

6.4.3 Promoting student employment

We actively build a platform for employment services and provide students with a full range of employment guidance and career planning services. We provide students with the latest job information, job-seeking skills and career development advice, and offer personalized career guidance according to students' personal situation and career planning needs. We also provide personalized career guidance according to students' personal situation and career planning needs. We help students adapt to the market demand and employment environment, and successfully find employment.

6.4.4 Industrial development of the service sector

Provide multi-level talent support for the industrial development needs of the service industry. Through cooperation with enterprises to carry out personnel training, technical consulting and other service activities, to provide talent protection and technical support for industry enterprises; to solve technical development problems, and to promote the transformation and upgrading of the industry and sustainable development. Creative design workshop course content introduction can be seen in Figure 3.

Figure 3 Creative Design Workshop Course Content Introduction

The implementation plan and methodology of digital informatization, "integrating science and reality, realizing situation", covers many aspects, aiming at stimulating students' learning interest and improving their professional skills and comprehensive quality through multi-dimensional technical means and school-enterprise cooperation mode, so as to provide strong talent support for the local economic development and industry demand.

7 CONCLUSIONS AND PERSPECTIVES

The innovative research on the teaching of environmental design through digital informatization, "integrating science and reality, realizing context", has achieved remarkable results in Guangdong University of Technology and Normal Studies (GDUTNS). Through the introduction of advanced digital technology and equipment, the establishment of a rich digital teaching resource library, the adoption of virtual teaching and research and hybrid teaching mode, the university has effectively improved the quality and efficiency of teaching. At the same time, through practical teaching and project-driven teaching mode, interdisciplinary cooperation and academic exchanges and other activities, the university has cultivated students' practical and innovative abilities.

In the future, Guangdong Normal University of Technology will continue to deepen the teaching reform of digital informatization and explore more efficient and innovative teaching modes and methods through "integrating science and reality, realizing context". At the same time, the university will also strengthen the contact and cooperation with enterprises and the society, promote the integrated development of industry-university-research, and cultivate more high-quality environmental design talents with interdisciplinary vision and innovation ability for the society.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

This research was supported by the 2021 Guangdong Province Undergraduate College Teaching Quality and Teaching Reform Project Construction Project--Research on Teaching Innovation of Environmental Design Major Based on Digital Informatization of "Theory and Practice Integration, Situational Realization" (Project No.: 13); This research was supported by the 2020 Provincial First-Class Undergraduate Major Construction Point (Environmental Design Major) and Provincial First-Class Undergraduate Course "Basics of Landscape Design" of the General Office of the Ministry of Education; This research was supported by the Ministry of Education announced a major project (Category A) of the Special Topic of Chinese Excellent Traditional Culture (Nishan World Confucian Center/China Confucian Foundation Project Fund Project): "Intertwining and Symbiosis - Research on Architectural Decoration in the Historical Center of Macau" (23JDTCA010); This research was supported by the Supported by the Science and Technology Development Fund of the Macao Special Administrative Region (Project No.: 0036/2022/A); This research was supported by the Training of talents for virtual reality experience art creation in the Historic Centre of Macau (Project No.: 2024-A-05-110-622); This research was supported by the 2022 Doctoral Construction Unit Research Project of Guangdong Polytechnic Normal University-Research on the Evaluation of Color Satisfaction of Future Urban Environment Based on Metaverse-Taking the Greater Bay Area as an Example (Project No.: 22GPNUZDJS 59); Research on the spatial form and architectural characteristics of Lingnan traditional villages under the background of rural revitalization (Project No.: 22GPNUZDJS58); This research was supported by the Key field project of Guangdong Provincial Department of Education-"Research on the path of "micro-transformation" under the perspective of serving Guangdong's rural revitalization" (Project No.: 2021ZDZX4047); This research was supported by the Guangdong Polytechnic Normal University 2021 school-level scientific research project talent special project-research on the optimization of public green space layout in Macau (Project No.: 2021SDKYB058); This research was supported by the Guangdong Polytechnic Normal University horizontal project-research and development of green ecological and energy -saving garden landscape lighting devices (Project No.: 1747379); This research was supported by the Guangdong Polytechnic Normal University Zhou Junling scientific research start-up fee (Project No.: 99166990233).

REFERENCES

[1] Xie Wenming. Exploration of Integrated Teaching Mode under School-Enterprise Cooperation Mechanism. Vocational and Technical Education,2011,32(17):34-36.

[2] WAR DECHEN, NIE Lanshun, TANG Dekai, et al. Virtual teaching and research center:A new form of collaborative teaching and research. Modern Educational Technology,2022,32(03):23-31.

[3] Liu Xingjian. Optimization measures for teaching evaluation under big data technology. Information and Computer (Theoretical Edition), 2019, 31(19): 247-248.

[4] Liu Dan. Application of virtual reality technology in environmental art design. Journal of Hunan Agricultural University (Natural Science Edition),2008(04):458-461.

[5] Zhang Rui, Zhu Jianjia, Cai Hongchang, et al. Research on teaching innovation of the course "Landscape Planning and Design". Modern Rural Science and Technology, 2023, (05): 123-125.

[6] Lin Shanghai, Yang Yan. Research on the “typical project-based” garden engineering construction course reform. Guangxi Urban Construction, 2021, (10): 91-94.

[7] YU Yi,WU Jia-Nan. The application of virtual reality technology in the practical teaching of environmental design majors. Art Education Research,2021(08):110-113.

[8] Cuihua Zhang. Exploration on the construction of practical training base for the integration of physics and reality. Vocational Education Forum,2011(29):53-54+57.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3125

EMPOWERING COLLEGE ENGLISH WRITING INSTRUCTION WITH CHATGPT: INTEGRATION OF TEACHER-AI-STUDENT FRAMEWORK AND POA

Li Li
School of Foreign Studies, South China Agricultural University, Guanzhou 510640, Guangdong, China.
Corresponding Email: 952771716@qq.com

Abstract: This study seeks to optimize the Production-Oriented Approach (POA) by integrating ChatGPT to enhance college English writing instruction. Building on the three stages of POA, a refined instructional model—GUIDE—is proposed, consisting of five stages: Generating, Understanding, Integrating, Designing, and Evaluating. The study further examines the application of this model, highlighting the critical role of ChatGPT in supporting teachers with task design and guiding students in its effective and ethical use. By addressing challenges such as technological dependence and academic integrity, this approach explores potential strategies and provides practical insights that contribute to the advancement of college English writing pedagogy.
Keywords: ChatGPT; College English writing; Teacher-AI-Student framework; POA; GUIDE model

1 INTRODUCTION

With the rapid development of artificial intelligence technologies, the application of ChatGPT in the field of education has garnered widespread attention. Its powerful language generation capabilities and instant feedback functions present new possibilities for college English writing instruction [1-2]. Studies have shown that ChatGPT can support the development of personalized learning resources, provide writing guidance, and foster critical thinking skills [3-4]. However, the widespread use of ChatGPT has also raised concerns regarding technological dependence, content accuracy, and academic integrity [5]. Against this backdrop, it is crucial to explore practical models that can fully leverage the advantages of this technology while optimizing teaching outcomes.

The Production-Oriented Approach (POA) is a learner-centered teaching theory that achieves instructional objectives through three stages: “motivating,” “enabling,” and “assessing” [6]. Since its introduction, it has gained popularity in writing instruction by constructing authentic contexts and sparking students' curiosity [7-9]. However, it faces challenges related to the efficiency of material acquisition and the provision of timely feedback [10]. The advent of ChatGPT offers an opportunity to enhance this teaching approach, thereby improving educational outcomes. This research focuses on leveraging ChatGPT to enhance the POA framework, aiming to improve college English writing instruction.

2 LITERATURE REVIEW

2.1 The Application of ChatGPT in Education

The application of ChatGPT in education has emerged as a rapidly growing area of research, showcasing significant potential. Studies highlight its ability to support personalized learning resources, enhance writing instruction, and foster the development of critical thinking skills [11-12]. ChatGPT is particularly effective in assisting students with tasks such as preparing outlines, revising content, proofreading, and reflecting on their writing, making it a valuable tool for improving students' writing skills and reducing the workload of teacher feedback [13]. Its role is also confirmed in enhancing the efficiency of second language writing assessment [14]. Furthermore, generative AI technologies, such as ChatGPT, can promote critical thinking, but they stressed the importance of students critically evaluating the generated content and refining their prompts [15].

AI technologies like ChatGPT are transforming traditional teaching frameworks from a "teacher-student" binary structure to a "teacher-AI-student" ternary structure [16]. This shift emphasizes collaboration among teachers, students, and AI, promotes the transition of teaching content from manual production to intelligent production, and supports an evaluation model that integrates "knowledge and competence." However, most current studies focus on the overall impact and potential applications of ChatGPT in foreign language teaching, while research on its integration with specific teaching methods remains limited [17]. Guided by POA, an experimental approach was undertaken with GPT-4 to create communicative scenarios [18], with limited application in real classroom settings.

2.2 Integration of POA and ChatGPT

POA emphasizes learning in authentic contexts, guiding students to complete tasks through facilitation and fostering reflection and improvement through evaluation [19-20]. Despite its effectiveness in constructing authentic learning

environments, POA faces challenges in fully supporting student autonomy and engagement, such as inefficiencies in providing timely feedback and difficulties in acquiring diverse teaching materials, which limit its practical application. To address these issues, a human-machine collaborative strategy known as COPILOTS is suggested [21]. However, this model lacks detailed exploration of task design and implementation. These challenges necessitate innovative solutions to enhance the POA framework and improve teaching outcomes.

The integration of AI technologies, such as ChatGPT, offers promising opportunities to address these limitations. ChatGPT can improve feedback efficiency, provide diverse teaching resources, and support independent learning by offering personalized assistance and instant feedback [22-23]. For example, it can assist students in preparing outlines, revising content, and reflecting on their writing, while also reducing the workload of teachers by automating repetitive feedback tasks. However, concerns regarding technological dependence, content accuracy, and academic integrity remain critical issues that require careful management [24]. Educators play a pivotal role in guiding students toward the ethical and effective use of ChatGPT, ensuring its application fosters independent thinking and minimizes risks to academic integrity.

Building on the three stages of POA—motivating, enabling, and assessing—the GUIDE model integrates ChatGPT to refine and extend the approach. By leveraging ChatGPT's capabilities, the GUIDE model addresses POA's limitations in feedback efficiency and material preparation. It optimizes task design, enhances teacher-AI-student collaboration, and supports students in developing critical thinking and academic integrity. This integration provides a structured pathway for incorporating AI into college English writing instruction, offering practical insights for improving teaching effectiveness and student outcomes.

This study explores the integration of ChatGPT with the POA through the teacher-AI-student collaborative GUIDE model. By refining and extending the POA, GUIDE offers a structured approach to fostering triadic interaction among teachers, AI, and students.

3 THE GUIDE MODEL IN WRITING INSTRUCTION

Based on the three-stage theory of POA — motivating, enabling and assessing — the GUIDE model integrates ChatGPT to address POA's limitations in feedback efficiency and material preparation. It introduces five stages: Generating, Understanding, Integrating, Designing, and Evaluating, aiming to optimize instructional design and foster teacher-AI collaboration.

(1) Generating: ChatGPT generates teaching materials and task scenarios, providing a foundation for instructional design.

(2) Understanding: Teachers evaluate and refine the AI-generated content to ensure alignment with students' needs and learning objectives.

(3) Integrating: Refined content is combined with teachers' expertise to create coherent and structured teaching activities.

(4) Designing: Tasks and evaluation criteria are developed to ensure effective implementation and achievement of learning goals.

(5) Evaluating: ChatGPT provides multi-dimensional feedback, complementing teacher evaluations and supporting students' iterative improvement.

The GUIDE model is dynamic and adaptable, enabling teachers to adjust each stage to specific instructional contexts. By establishing a collaborative framework among teachers, AI, and students, it offers an effective solution for college English writing instruction, particularly in enhancing feedback and personalized learning support (as shown in Figure 1).

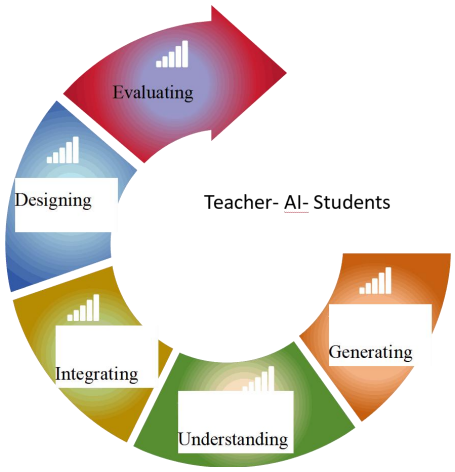

Figure 1 The GUIDE Model in Writing Instruction within the POA Framework

4 APPLICATION OF GUIDE MODEL IN WRITING INSTRUCTION

This research focused on second-year college students in a reading and writing course. Most students had passed CET-4, some CET-6, and a few were preparing for IELTS or TOEFL. With strong language skills and motivation, they were well-suited for POA-based instruction. The semester-long course lasted 12 weeks, with 2 class hours per week, and students completed one writing task every two weeks. The study explored expository, argumentative, and practical writing, using examples from students' assignments.

4.1 Application of GUIDE model in Expository Writing

Expository writing is a foundational aspect of college English, focusing on fostering clarity and coherence in presenting ideas. However, students often face challenges such as limited content, disorganized structure, and repetitive language. To address these difficulties, the teacher introduced a task titled "Live Streaming for My Hometown," leveraging ChatGPT to assist students in exploring their hometown's cuisine, scenery, history, or cultural traditions and presenting them through modern communication formats. This task was designed to enhance students' skills in cultural expression, organization, and intercultural communication.

In the generating phase, the teacher guided students to identify unique features of their hometown and live streaming formats (e.g., food tours or scenic introductions). ChatGPT provided resources such as background information, opening scripts, and language suggestions, enabling students to draft scripts quickly. For example, ChatGPT could generate background details ("My hometown is famous for its hand-pulled noodles, known for their chewy texture and rich flavor"), opening lines ("Welcome to my hometown! Today, I'll take you on a journey to explore the breathtaking landscapes of our region"), and optimized expressions (e.g., improving "The scenery here is beautiful." to "The scenery here is stunning, with rolling hills and crystal-clear rivers").

In the understanding and integrating phases, the teacher helped students refine their scripts using ChatGPT-generated outlines, ensuring a clear structure with an introduction, main content, and conclusion (as shown in Table 1).

Table 1 Outline Example for a Hometown Livestream Script

Introduction	Welcome to my hometown, a place full of breathtaking landscapes and rich cultural heritage.
Body 1	One of the most iconic dishes in my hometown is the spicy hotpot, which is not only delicious but also a symbol of togetherness in our culture.
Body 2	The hotpot tradition dates back to the Qing Dynasty, when it was a favorite meal of the royal family.
Body 3	If you visit, make sure to try the hotpot at Lao Ma's restaurant, which has been serving authentic flavors for over 50 years.
Conclusion	I hope you enjoyed this journey through my hometown. Come and experience the warmth, flavors, and beauty of our culture for yourself!

In the designing and evaluating phases, the teacher organized multi-level evaluations to help students refine their scripts. Students added details based on ChatGPT's feedback (e.g., "My hometown has a traditional snack called 'sugar painting,' an art form made of sugar in various shapes that is very popular among children") and used ChatGPT to check the coherence and accuracy of their peers' scripts. Teachers combined ChatGPT's feedback to assess students' performance in language, structure, and creativity, guiding further improvements.

With ChatGPT's support, students used modern formats (e.g., live streaming) to promote their hometown's culture. ChatGPT provided materials, outlines, and language suggestions, helping students build frameworks and improve clarity and vividness. The teacher enhanced cultural expression and intercultural communication skills through content filtering, discussions, and exercises. This practical and engaging design, rooted in students' lives, supports future learning and practice.

The teacher should guide students to use ChatGPT critically, ensuring accuracy and avoiding over-reliance. By encouraging students to analyze real-world cases, such as cultural traditions or local practices, they can enhance their originality, critical thinking, and academic integrity. Additionally, the teacher can foster intercultural communication skills by prompting students to compare their findings with global perspectives, helping them develop a deeper understanding of cultural diversity and effective expression.

4.2 Application of GUIDE model in Argumentative Writing Instruction

Argumentative writing requires students to craft well-reasoned arguments and defend their perspectives convincingly. As an essential aspect of college English, it often poses challenges, such as difficulties in constructing logical arguments, organizing ideas effectively, and articulating thoughts with clarity and precision. To tackle these issues, the teacher designed a task titled "The Impact of Artificial Intelligence on Employment," incorporating ChatGPT to support students in analyzing complex social topics while improving their logical reasoning and academic writing skills.

In the generating phase, the teacher prompted students to brainstorm arguments (e.g., "How does AI affect employment structures?" "How can we balance AI's opportunities and challenges?"). ChatGPT provided materials such as background information, data, and language suggestions. For example, it generated arguments ("The rise of AI has led

to significant job displacement, particularly in industries reliant on repetitive tasks") and refined expressions (e.g., improving "AI lets many people without jobs" to "The rise of AI has disrupted traditional job markets, creating both challenges and opportunities").

In the understanding and integrating phases, the teacher guided students to refine their essays using ChatGPT-generated outlines, ensuring clear structure (introduction, body, conclusion). Students supplemented arguments with data and examples, addressing issues like "limited evidence" by adding cases of AI creating new jobs to enhance persuasiveness.

In the designing and evaluating phases, students revised their work based on ChatGPT's feedback, such as adding statistics or reorganizing arguments. Peer reviews, supported by ChatGPT, helped check coherence and accuracy. The teachers combined ChatGPT's feedback to evaluate logic, language, and creativity, guiding further improvements (as shown in Table 2).

Table 2 Outline Example for an Argumentative Essay on AI and Employment

Introduction	Introduce the topic and its significance. Example: "AI is reshaping the job market, bringing both challenges and opportunities."
Point 1	Discuss the first main idea. Example: "AI has replaced repetitive jobs in industries like manufacturing and customer service."
Point 2	Analyze the second main idea. Example: "AI has created new roles, such as data scientists and AI trainers."
Point 3	Propose solutions or insights. Example: "Upskilling workers and implementing supportive policies can balance AI's impact on jobs."
Conclusion	Summarize key points and emphasize the importance of adapting to AI-driven changes. Example: "Embracing AI while addressing its challenges is key to a balanced job market."

By integrating ChatGPT, students significantly improved their ability to analyze complex issues and express ideas logically. ChatGPT provided resources, such as structured outlines, refined language suggestions, and relevant data, which helped students construct well-supported arguments. Teachers played a crucial role in ensuring the depth and accuracy of students' work by encouraging them to critically evaluate AI-generated content, refine their reasoning, and incorporate diverse perspectives. This process not only strengthened students' logical reasoning and academic writing skills but also promoted independent thinking and problem-solving abilities.

4.3 Application of GUIDE Model in Practical Writing Instruction

Survey-based essays are crucial in college English, fostering students' logical thinking, data analysis, and academic writing skills. However, challenges like unclear scope, weak analysis, disorganized structure, and improper language often arise. Integrating ChatGPT enhances teaching efficiency, aiding students in material collection, structure building, and language refinement.

Using the theme "Irrational Behavior," students investigated campus examples, analyzing causes, impacts, and solutions. This task helped them grasp survey report structures and improve critical thinking, data analysis, and academic expression.

In the generating phase, the teacher guided students to use ChatGPT for definitions, theoretical backgrounds, and examples (e.g., procrastination, impulsive spending, staying up late). ChatGPT also assisted in designing survey questions (e.g.,"What causes you to procrastinate?") and generating outlines, including Introduction (definition and purpose), Findings (results), Analysis (causes and impacts), Recommendations (solutions), and Conclusion (summary).

In the understanding and integrating phases, students refined their content using ChatGPT-generated outlines, incorporating data, theories, and strategies into their analysis. The following outline summarizes the structure students used to analyze irrational behavior, guided by ChatGPT-generated suggestions (as shown in Table 3).

Table 3 Outline for Analyzing Irrational Behavior

Introduction	Define irrational behavior and state the survey's purpose.
Findings	Present data (e.g., 68% of students admitted to procrastination").
Analysis	Explain causes using theories (e.g., "time discounting effect").
Recommendations	Suggest solutions (e.g., time management training).
Conclusion	Summarize findings and highlight significance.

In the designing and evaluating phases, students revised reports based on ChatGPT's feedback, ensuring logical coherence and accurate language. Peer reviews identified gaps like "lack of specific examples." The teacher combined ChatGPT's analysis to assess students' logic, language, and data use, guiding further improvement.

With ChatGPT and the GUIDE model, students completed tasks efficiently, improving language, logic, and data skills while deepening their understanding of irrational behaviors. This design integrates theory and practice, fostering critical thinking and academic writing. To investigate irrational behaviors among college students, the following sample questionnaire was designed as part of the study.

Sample Questionnaire (Simplified)
Topic: Survey on Irrational Behaviors Among College Students
1. How often do you engage in impulsive spending?
A. Once a week or more
B. 1-2 times a month
C. Rarely or never
2. Do you often procrastinate on completing academic tasks?
A. Yes
B. No
3. How many times a week do you stay up late?
A. Every day
B. 3-4 times a week
C. 1-2 times a week
D. Rarely or never
Teachers should guide students to critically evaluate and verify the sources and accuracy of data provided by ChatGPT, ensuring the reliability of their work. By encouraging students to analyze real-world cases, such as irrational behaviors observed on campus, and to propose innovative, evidence-based solutions, the task fosters creativity, critical thinking, and practical application. Additionally, teachers can emphasize the importance of integrating AI-generated content with students' independent research and insights, helping them develop a balanced approach to using technology. This process not only enhances students' logical reasoning and academic writing skills but also prepares them to address complex, societal challenges with originality and confidence.

5 ROLES OF TEACHER, AI AND STUDENTS IN THE GUIDE MODEL

The GUIDE model, structured around generating, understanding, integrating, designing, and evaluating, defines clear roles for teachers, students, and AI (e.g., ChatGPT) to achieve teaching goals. Teachers lead the process, designing tasks, guiding activities, and ensuring effective use of technology. Students actively participate, enhancing learning through engaging and critical thinking. ChatGPT provides technical support, offering instant feedback and personalized assistance.
Teachers oversee all stages: designing questions and filtering materials in the generating phase, analyzing and adjusting content in the understanding phase, organizing activities in the integrating phase, setting tasks and criteria in the designing phase, and conducting multidimensional evaluations in the evaluating phase. Their professional judgment ensures teaching quality.
Students use ChatGPT to gather materials, filter information, integrate personal ideas, refine expressions, and reflect through self- and peer-assessment. Interaction with ChatGPT improves their language, critical thinking, and intercultural communication skills.
ChatGPT supports all phases by providing materials, optimizing language, generating analyses, identifying issues, and offering feedback. While it improves efficiency, challenges like inconsistent quality and over-reliance require teacher guidance.
The GUIDE model highlights teacher leadership, student engagement, and technological support. Effective implementation requires addressing issues like technological dependence, teacher proficiency, and student independence, with ongoing optimization to refine teaching design.

6 CONCLUSION

This study, based on the GUIDE model and POA's "motivating-enabling-assessing" framework, explores ChatGPT's role in college English writing. The GUIDE model integrates teacher leadership, student participation, and technological assistance, offering a systematic teaching solution. ChatGPT enriches the motivating phase with diverse materials, supports the enabling phase with feedback and language optimization, and enhances the assessing phase with multi-level evaluations, improving students' language and critical thinking skills.
Challenges include over-reliance on technology, inconsistent content quality, academic integrity issues, and limited teacher proficiency. Future efforts should guide students, design original tasks, foster independent thinking, and explore ChatGPT's potential across proficiency levels and disciplines, providing innovative approaches for English writing instruction.

COMPLETING INTERESTS

The author has no relevant financial or non-financial interests to disclose.

FUNDING

Guangdong Higher Education Society's "14th Five-Year Plan" 2024 Higher Education Research Project:Issues and Countermeasures in the Application of AIGC Large Language Models in Assisting Undergraduate English Thesis Writing (24GYB13); Chongqing Technology and Business University Teaching Reform Project: Research and Practice

of Blended Foreign Language Teaching in Higher Education Oriented Towards Deep Learning (2019236)

REFERENCES

[1] Li Xiaowen, XV Yuanyuan, Zhai Xuesong, et al. Empowering university student development with generative AI: International experiences and China's pathways. China Distance Education, 2024, 44(12), 36-49. DOI: 10.13541/j.cnki.chinade.2024.12.001.
[2] Strzelecki A. ChatGPT in higher education: Investigating bachelor and master students' expectations towards AI tool. Education and Information, Technologies, 2024. DOI: 10.1007/s10639-024-13222-9.
[3] Adel A, Ahsan A, Davison C. ChatGPT promises and challenges in education: Computational and ethical perspectives. Education Sciences, 2024, 14(8): 814. DOI: 10.3390/educsci14080814.
[4] Memarian B, Doleck T. ChatGPT in education: Methods, potentials, and limitations. Computers in Human Behavior: Artificial Humans, 2023, 1(2): 100022. DOI: 10.1016/j.chbah.2023.100022.
[5] Bouteraa M, Bin-Nashwan S A, Al-Daihani M, et al. Understanding the diffusion of AI-generative (ChatGPT) in higher education: Does students' integrity matter? Computers in Human Behavior Reports, 2024, 14: 100402. DOI: 10.1016/j.chbr.2024.100402.
[6] Wen Qiufang. Theoretical framework and practice of the Production-Oriented Approach. Foreign Language Education Research, 2015, 18(2): 1-10.
[7] Sun Shuguang. An example analysis of the principles of teacher-student collaborative evaluation in the "Production-Oriented Approach." Frontiers in Foreign Language Education Research, 2020, 3(2): 20-27, 90-91.
[8] Zhang Lingli. A study on the teaching effectiveness of the "Production-Oriented Approach." Modern Foreign Languages, 2017, 40(3): 369-376, 438.
[9] Zhang Wenjuan. A self-narrative study of college foreign language teachers applying the "Production-Oriented Approach." Chinese Foreign Languages, 2020, 17(1): 60-67. DOI: 10.13564/j.cnki.issn.1672-9382.2020.01.009.
[10] Wang Haixiao. Exploring the application of generative artificial intelligence in the reform of college English teaching: A case study of teaching reform in the "General Academic English Writing" course. Frontiers in Foreign Language Education and Research, 2024, 7(4): 41-50, 95. DOI: 10.20083/j.cnki.fleic.2024.0036.
[11] Suriano M. Exploring AI in education: Current trends and future possibilities. Journal of Educational Technology, 2024, 30(1): 55-67.
[12] Aljanahi A M, Alqahtani M A. The role of AI tools in enhancing personalized learning: A systematic review. Computers and Education: Artificial Intelligence, 2023, 5: 100123. DOI: 10.1016/j.caeai.2023.100123.
[13] Su Yanfang, Lin Yu, Lai Chun. Collaborating with ChatGPT in argumentative writing classrooms. Journal of Second Language Writing, 2023, 57: 100752. DOI: 10.1016/j.asw.2023.100752.
[14] Barrot J S. Using ChatGPT for second language writing: Pitfalls and potentials. Assessing Writing, 2023, 57: 100745. DOI: 10.1016/j.asw.2023.100745.
[15] Essel H B, Vlachopoulos D, Adom D. Generative AI in higher education: Implications for critical thinking and academic integrity. Educational Technology and Society, 2023, 26(3): 45-58.
[16] Yang Z K, Wang J, Wu D, et al. Exploring the impact of ChatGPT/generative AI on education and response strategies. Journal of East China Normal University (Educational Sciences Edition), 2023, 41(7): 26-35. DOI: 10.16382/j.cnki.1000-5560.2023.07.003.
[17] Chen Mo, Lü Mingchen. College English writing instruction in the ChatGPT environment. Contemporary Foreign Language Studies, 2024(1): 161-168.
[18] Xu Jiajin, Zhao Chong. Applications of large language models in foreign language teaching and research. Foreign Language Teaching and Research Press, 2024.
[19] Wen Qiufang. The Production-Oriented Approach and college English writing instruction. Foreign Language Teaching, 2020, 41(2): 1-6.
[20] Zhang Wenjuan. An Experimental Study on the Impact of POA on College English Writing. Modern Foreign Languages, 2017, 40(3): 377-385.
[21] Li Dongqing. Human-AI collaborative POA teaching design supported by ChatGPT. Foreign Language Education in China, 2024, 7 (4): 58-64.
[22] Bin-Nashwan S A, Sadallah M, Bouteraa M. Use of ChatGPT in academia: Academic integrity hangs in the balance. Technology in Society, 2023(75): 102370. DOI: 10.1016/j.techsoc.2023.102370.
[23] Pesovski I, Santos R, Henriques R, et al. Generative AI for customizable learning experiences. Sustainability, 2024, 16(7): 3034. DOI: 10.3390/su16073034.
[24] Cotton D R E, Cotton P A, Shipway J R. Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. Innovations in Education and Teaching International, 2023, 60(2): 117-128. DOI: 10.1080/14703297.2023.2190148.

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3126

THE MODELS AND PATHWAYS OF LEGAL KNOWLEDGE DISSEMINATION ON MOBILE SHORT VIDEO PLATFORMS

Cheng Yang
School of Traffic Law, Shandong Jiaotong University, Jinan 250357, Shandong, China.
International Education Management, Woosong University, Daejeon 35000, Chungcheongnam-do, South Korea.
Corresponding Email: 270330815@qq.com

Abstract: The popularization of mobile internet and the widespread use of smartphones have presented both new opportunities and challenges for legal dissemination. The immediacy and portability of mobile short videos align with modern fragmented reading habits, enabling efficient communication that can significantly enhance the acceptance of legal knowledge and shift audiences from passive to active engagement. Ensuring the accuracy and authority of legal information while meeting users' diverse needs is essential to improving the effectiveness of legal dissemination through mobile short videos. Research based on the Uses and Gratifications Theory provides a solid framework for addressing these challenges.
Keywords: Mobile short video platforms; Legal knowledge dissemination; Legal awareness education; Innovation in legal dissemination models

1 INTRODUCTION

Under the background of the new era, the work of popularizing the law is actively exploring diversified paths, strengthening the publicity of popularizing the law at the grassroots level, and improving the legal literacy of the public. However, although positive progress has been made in the popularization of the law, in practice, we also find that the distribution of the law popularization resources in different regions is not balanced, and the content of the law popularization is more professional in some fields, and there is a certain gap with the acceptance of the general public. Let citizens develop good habits of thinking about the rule of law, innovate the form of law popularization, enrich the content of the law popularization, make the legal knowledge become easy to understand, become a key difficulty of the current law popularization.

2 NEW OPPORTUNITIES FOR MOBILE SHORT VIDEO PLATFORM IN THE WORK OF LAW POPULARIZATION

At the same time, with the deep popularity of mobile Internet and the wide use of smartphones, the law publicity ushered in a new opportunity. According to the 53rd Statistical Report on the Development of China Internet released by China Internet Network Information Center (CNNIC), as of December 2023, the scale of mobile Internet users in China has reached 1.091 billion, up 25.62 million; the scale of short video users reached 1.053 billion, up 41.45 million compared with the same period a year before, accounting for 96.4% of the total Internet users. This huge user base and active interactive atmosphere undoubtedly provide a broader space and possibility for legal publicity.The immediacy and portability of mobile short video make it have higher communication efficiency, which can be quickly shared and spread in social media, short video platforms, and other channels, in line with the fragmented reading habits of modern people. Moreover, the form is rich and the content is interesting, which is popular for the people, improves the acceptance of legal knowledge, and makes the audience change from passive to active.
However, mobile short video law dissemination is also facing some challenges and problems. How to ensure the accuracy and authority of law popularization information, how to meet the diversified needs of users for law popularization, how to improve the dissemination effect of law popularization information, these problems need to be discussed in depth from the two levels of theory and practice. As one of the important theories of media communication research, the theory of using and satisfying provides a powerful tool for us to understand the user behavior and analyze the communication effect. This theory emphasizes the initiative, selectivity and purpose of users in the process of using media, and believes that their needs and motivation are the key factors affecting the effect of media use and communication. In the dissemination of mobile short video, the use and satisfy the theory also have important guiding significance. Therefore, this paper will study the effect of mobile short video law dissemination from the perspective of using and satisfying the theory. By analyzing the aspects of users' use behavior, demand satisfaction and communication effect, the internal laws and influencing factors of mobile short video law dissemination are revealed, providing theoretical support and practical guidance for optimizing the communication strategy of law popularization and improving the effect of law popularization.

3 MOBILE SHORT VIDEO LAW POPULARIZATION MODE AND ITS RESEARCH STATUS

3.1 The Development and Definition of Mobile Short Video

Short video, also known as small video or micro video[1], was first developed in foreign countries and showed an explosive growth trend after the introduction into China. However, the relevant research on short video meets its own development. Domestic research on short video law popularization shows a steady upward trend, which is divided into three stages: "slow exploration", "rapid growth" and "stable development". The search results on CNKI showed that the short video law popularization was the theme, and its literature was first seen in 2019. Mobile short video refers to a short video that is different from more than 5 minutes, ranging from 15 seconds to 5 minutes, relying on mobile intelligent terminals to achieve real-time shooting and editing, and can be shared on social media platforms. Mobile short video law popularization refers to the use of mobile devices (such as smart phones, tablet computers) on the short video platforms (such as TikTok, Kuaishou, B station, wechat / QQ video number, etc.) to publicize and popularize legal knowledge.

3.2 The Current Main Mode of Legal Popularization

In the law popularization and dissemination of mobile short video platforms, different modes of law popularization show their own advantages and characteristics and attract a wide range of audiences. These models can be roughly divided into the following categories, each of which carries a specific educational value and communication effects: 1. Case analysis: represented by "Luo Xiang says Criminal Law", this mode selects representative and interesting legal cases and analyzes the legal principles behind the cases in a simple way, making the complex legal provisions vivid and easy to understand. Its advantage lies in that it can quickly grasp the audience's attention, stimulate the interest in learning, and enhance the practicality and memory points of legal knowledge. 2. Interpretation type of legal provisions: For example, in the "Thick Big Law Examination" on the B website, this mode focuses on the detailed interpretation of the legal provisions, and provides accurate legal knowledge explanation for the examinees based on the examination needs. Its advantages lie in the content authority and strong system, which helps the audience to establish a solid legal foundation, especially suitable for the group with legal study or examination needs. 3. Interactive question and answer type: The "Legal popularization Assistant" and other accounts adopt this mode to guide the audience to participate in thinking and discussion by raising legal questions close to life, and finally give the correct answer and legal basis. This mode enhances the audience's sense of participation and gain, promotes the two-way communication of legal knowledge, and helps to deepen the understanding and memory. 4. Legal melodrama type: the "Legal Story Collection" and other accounts in the wechat video account, simulate the legal scenes in the form of short drama, and integrate the legal knowledge into the story plot. Its advantages lie in its novel form and strong interest, which can attract more attention of non-professional audiences, so that legal knowledge can be spread in a relaxed and happy atmosphere. 5. Popular science of legal knowledge: represented by "people's rule of law" on TikTok, such accounts are committed to the popularization of legal knowledge in daily life, covering traffic regulations, marriage and family, labor contract and other fields. It is characterized by strong practicability and close to life, which provides the audience with the legal knowledge of learning and use, and helps to improve the public's legal literacy and self-protection ability. 6. Live broadcasting law popularization: With the popularization of live broadcasting technology, more and more legal experts, lawyers and judicial staff give lectures or answer audience questions through live broadcasting platforms. Live broadcast law popularization has the advantages of real-time interaction, large amount of information and wide coverage. It can directly respond to the concerns of the audience and provide personalized legal consulting services, further narrowing the distance between the law and the public.

4 THE ORETICAL RESEARCH AND ITS APPLICABILITY

4.1 The Evolution and Development of Use and Satisfaction Theory

The use and satisfaction theory originated from a funcalist perspective in the mass media field in the 1940s and is a response to traditional mass media research[2]. Based on functional analysis, the logic of theoretical use and satisfaction is the social and psychological needs of the mass media and other sources[3]. The proposal of use versus satisfaction theory marks a key shift in communication research. Before this, communication research mainly focused on the perspective of communicators, discussing how communicators exert influence on the audience, such as "bullet theory" and "subcutaneous injection theory". In 1959, Katz pointed out that much of previous communication research was devoted to investigating the question: What role did the media play in people? (what do media do to people?) If you change this question, what do people do with the media? (what do people do with the media?) Then communication research will save itself from getting a new life. After it, communication research gradually turned to be audience-centric and began to delve into how audiences use information and the key role they play throughout the communication process. This shift makes the audience's needs, preferences and feedback important considerations in communication research. From the late 1950s to the early 1960s, with the emergence of TV, the media consumption options became increasingly rich, which further promoted the development of the use and satisfaction theory. Researchers have begun to explore more in-depth how audiences meet their social and psychological needs by using the media[4]. Katz systematically elaborated this theory in 1974, turning the research shifted to the focus on the audience's motives and how the audience uses the media to satisfy them. When proposing problems and solutions, audiences will use the media to meet specific needs related to personal characteristics and social environment[5]. Research in this period not only emphasizes the initiative of the audience, but also reveals the diversity of the media in meeting the

needs of the audience. Today, communication scholars generally regard the theory of "use and satisfaction" as an important subtradition in the study of media effects[6]. This theory emphasizes the initiative and selectivity of the audience in the process of media use, as well as the role of the media in meeting the needs of the audience, and also provides useful inspiration for media practitioners on how to better meet the needs of the audience and improve the attractiveness and influence of media content. When reviewing the evolution of the use and satisfaction theory, it is not difficult to find that the theory is always closely linked to the development of media technology and the changing needs of the audience. With the continuous emergence of new media and the increasing diversification of the audience's needs, the use and satisfaction theory will continue to play an important role in the field of communication science, providing theoretical support and practical guidance for media research and media practice.

4.2 The Applicability of the Use and Satisfaction Theory in the Dissemination of Mobile Short Video

The "Use and Satisfaction" theory emphasizes that individuals will actively contact the mass media to meet their needs according to their own needs. Studies of the use and satisfaction theory are first dated back to the 1940s on why people listen to radios [7]. He in 1942 surveyed the housewife to popular radio motive, to 5325 women listening to the radio interview, according to the results of the daytime radio series the audience not nearly large, and full of enthusiasm, the audience by listening to radio can achieve emotional release, desire to imagine check their life suggest satisfaction. With the popularity and popularity of the Internet, scholars began to investigate the motivational factors of Internet use. As a mass media, the Internet can meet interpersonal needs, such as information and social needs[8]. In the dissemination of mobile short videos, the motivation of the audience directly affects their choice and continuous watching of legal short videos.

Based on the theory of use and satisfaction, the audience's media use motivation can be divided into the following aspects:

4.2.1 Information requirements

Users acquire legal knowledge through short videos to meet their needs for information. For example, the user watched the legal answer video of the famous lawyer Yue Shenshan on TikTok, and quickly understood the relevant legal regulations and processing process of traffic accident responsibility; Chengdu Tianfu Public Security released nine short videos in TikTok in three months, receiving 13.37 million likes and 1.59 million followers. One tells the story of buyers and sellers of long Johns by the bank of Xinglong Lake who were caught using counterfeit money. These short videos provide the public with legal knowledge closely related to life and meet the needs of users for legal information.

4.2.2 Entertainment needs

The short video presents the legal knowledge in a vivid and interesting form to meet the entertainment needs of users. For example, on Bilibili (Bilibili), the legal science blogger "Zhang San" reproduces the classic court debate scenes through short videos, turning the boring legal provisions into interesting plots, and allowing users to unknowingly learn legal knowledge in the entertainment. TikTok The platform "hilarious Wuxi" team combined with the network security publicity week, the national anti-fraud and other nodes, in the way of short video, the legal policy through the easy-to-understand story plot interpretation. The account has 1 million followers and has received 12 million likes. They gradually expand from a single scene short drama to music MV, interactive short videos and other forms, which enhance the entertainment and attraction of the content.

4.2.3 Social needs

Mobile short video law dissemination provides rich social interaction functions, such as likes, comments, sharing, etc., to meet the social needs of users. For example, users watched a video of a legal answer by Liu Mengmeng, a lawyer from Beijing Deheng Law Firm, on the TikTok to learn about the specific provisions of the inheritance law in the civil code. Through vivid case analysis, Liu Mengmeng's video helps users to master important legal knowledge in a short time and meet their needs for timely and practical legal information. After watching the short videos, users can interact with other users in the comments area and share their views and feelings, forming a good social atmosphere. In Kuai Hand, after watching the short videos on online fraud prevention, users share their experiences and prevention experiences in the comments area, forming an active discussion area. This interaction not only enhances users' social experience, but also makes legal knowledge more widely spread and shared.

4.2.4 Self-improvement

For example, the user systematically learned the labor law knowledge video of the legal blogger "Blackface lawyer" on the watermelon video, and successfully protected their legitimate rights and interests; the user systematically learned the labor law knowledge video of the legal blogger "Fgirl Q & A" on TikTok, and successfully solved the contract disputes in the workplace. This not only improves the legal literacy of users, but also enhances their self-protection ability and social responsibility.

5 AUDIENCE ANALYSIS AND DISSEMINATION EFFECT OF MOBILE LEGAL POPULARIZATION SHORT VIDEO

5.1 Audience Analysis

5.1.1 Media use behavior of the audience

The communication object of mass communication is the general public in the society, which does not specifically refer to a certain class of the society, and has the universality of the audience.[9]Therefore, it needs to be a large-scale communication activity for the purpose of meeting the information needs of most people in the society. In the context of the Internet environment, teenagers occupy a high proportion of short video users, and compared with other user groups, they use short video software for a longer time. In view of this, creators need to uphold the correct user-oriented thinking, in-depth insight into and grasp the needs of this main user group. On this basis, the production of legal education short video should be committed to using the form of the audience popular, to ensure the effective transmission of information, and fully meet the information needs of the target audience. On the short video platform, the audience's use behavior usually includes content selection, viewing frequency and duration, interaction and sharing. Audiences usually find short legal short videos in line with their needs through keyword search, system recommendation and friend recommendation, and tend to choose those videos with short time, simple content and strong interactivity. These videos usually combine practical information such as case analysis and practical problem solving. Due to the short time span of short videos, audiences can use the fragmented time to watch them. This flexibility makes the audience more willing to watch continuously, and can be frequently exposed to legal knowledge in daily life. In addition to the simple viewing behavior, the audience's interactive behavior (such as likes, comments and sharing) is also an important feature of using short videos. This behavior not only helps the audience to deepen the understanding of the legal content, but also promotes the secondary dissemination of legal knowledge and expand its influence.

5.1.2 The demand satisfaction degree of the audience

The satisfaction of the audience reflects the effectiveness of the dissemination effect of mobile short video. Based on the theory of use and satisfaction, demand satisfaction can be divided into information satisfaction, entertainment satisfaction, social and interaction satisfaction. Do people get the legal knowledge they expect when they watch short legal videos? For the audience, if the video content can clearly and accurately answer the legal questions in their daily life, the sense of information needs will be satisfied. Short video law popularization not only has advantages in information transmission, but also greatly enhances the entertainment presentation form of the audience. If people can feel happy and relaxed in the process of watching, the satisfaction of their entertainment needs will increase. Through interacting with other users and content creators, the audience has gained social satisfaction when expressing their opinions and discussing legal issues. The more interaction, the stronger the audience's social needs and identity satisfaction.

5.2 Analysis of the Transmission Effect

5.2.1 User engagement

User engagement is one of the important indicators to evaluate the dissemination effect of mobile short video law popularization. User engagement includes not only the number of viewers, but also interactive behaviors, such as likes, comments, retweets, etc. These interactive behaviors can significantly improve the spread breadth and influence of video content. Users with high participation usually have a high viewing rate and high interaction enthusiasm. The frequency and number of users' active video watching legal short videos is an important manifestation of their participation. The more frequently the user watches, the greater the interest in the content, and the more obvious the effect of law popularization. Thumb up, comments, forwarding and other behaviors show that users not only passively accept legal knowledge, but also actively participate in the process of law popularization. Especially in the comments section, users often ask their own questions or share their experiences, which helps to reinforce the dissemination of legal knowledge.

5.2.2 User satisfaction

User satisfaction reflects the effect of legal short videos in meeting the needs of the audience. It can be evaluated by user feedback, comments, comments and other indicators. Whether the content of legal short videos is close to the needs of the audience, whether the information is accurate, and whether the expression is concise and clear. High satisfaction means that the video content can meet the audience's legal knowledge needs, and can attract the audience's attention in form. In addition to the content itself, the viewing experience (such as video length, picture quality, and presentation) is also an important factor affecting satisfaction. Short, interesting and interactive, legal short videos are more likely to gain recognition and praise from users.

5.2.3 User feedback

User feedback is mainly collected through the comment area, platform data and questionnaire survey, which reflects the audience's subjective evaluation of the legal short videos and their views on the effect of law popularization. The analysis of user feedback helps to evaluate the room for improvement and future direction of legal popularization content. After watching short legal videos, audiences will often express their recognition and gratitude for the content in the comment section. This kind of feedback shows that the video content not only meets its legal knowledge needs, but also has a high communication value. Some audiences may report that the video content is too simple, the information is not accurate enough, or the form is not attractive enough. This type of feedback provides a direction for improving the short video content.

6 CONCLUSION

This study deeply discusses the application and effect of mobile short video platform in the popularization of legal knowledge, and finds that mobile short video platform plays an important role in the popularization of the whole law. With its extensive user base, efficient communication speed and rich interactive forms, the mobile short video platform has opened up a new path for the popularization of legal knowledge, effectively improving the public's legal literacy and legal awareness. Combined with the analysis of use and satisfaction theory, this study found that when the audience obtains legal knowledge through the mobile short video platform, their media use behavior presents the characteristics of diversified, fragmented and personalized. At the same time, the needs of the audience are highly satisfied, indicating that the mobile short video platform has significant advantages in the popularization of legal knowledge. In addition, from the perspective of the communication effect, the mobile short video platform not only improves the penetration rate of legal knowledge, but also promotes the audience's in-depth understanding and application of legal knowledge. To sum up, mobile short video platform has broad application prospect and important practical value in legal knowledge popularization. In the future, we should further tap the potential of the mobile short video platform, optimize its content and services, so as to better meet the public's needs for legal knowledge, and promote the in-depth development of the work of national law popularization.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

This article is the research result of the 2024 Shandong Provincial Key Art Project "Research on the Popularization Model and Path of Legal Knowledge on Mobile Short Video Platforms", project number [L2024Z05100575].

REFERENCES

[1] Jiang Zhengjun,The Cultural Philosophy Reflection on the "Short Video" Cultural Feast—From the Perspective of Mass Culture Criticism Theory. Xinjiang Social Sciences, 2020(02).
[2] Zhang Zixuan, Wang Hai, Xu Dan. The Rise and Trends of "Mobile Short Video Social Applications". China Journalist, 2014(02).
[3] Jiang Lan, Hou Jie. Empirical Research on New Media Reading Promotion in University Libraries from the Perspective of Uses and Gratifications Theory. Information Science, 2019(04).
[4] Wang Shiyong. Analysis of the Concept and Characteristics of Internet Slang. Exploration, 2014(04).
[5] Chen Miaomiao. Motives for Youth's "Use-Satisfaction" of New Media and New Media Literacy. International Journalism, 2009(06).
[6] Lin Ling. Research on Innovation of New Media Legal Popularization Communication Model. Contemporary Communication, 2018(5).
[7] Joseph Klapper. The Effects of Mass Communication. Duan Peng, Trans. Beijing: China Media University Press, 2016: 13-14.
[8] Ma Bingxin. Exploration of the Transformation Opportunities of Television Media in the Context of Media Convergence. China Broadcasting and Television Journal, 2020(4).
[9] Wang Wenxun, Zhang Wenying. Research on the Overseas Dissemination of Japanese Television Content from the Perspective of Audience Psychology. Modern Communication (Journal of China Media University), 2019(11).
[10] Lin Ling. Legal Propaganda and Education: From Legal Popularization Model to Public Participation Model. Editorial Journal, 2015(5).

Trends in Social Sciences and Humanities Research
ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3127

THE INTEGRATION OF "INDUSTRY-EDUCATION-RESEARCH-INNOVATION" IN THE TRAINING PATHWAYS FOR TRANSLATION TALENT IN AGRICULTURAL UNIVERSITIES IN THE AI ERA: A CASE STUDY OF THE MASTER'S PROGRAM IN TRANSLATION AT SOUTH CHINA AGRICULTURAL UNIVERSITY

Fei Deng*, FeiWu Li, Lv Lin, XiHua Chen
School of Foreign Studies, South China Agricultural University, Guangzhou 510642, Guangdong, China.
Corresponding Author: Fei Deng, Email: faydra@126.com

Abstract: Against the backdrop of rapid advancements in artificial intelligence (AI) technology, the translation industry is undergoing profound changes, presenting new challenges and opportunities for traditional talent cultivation models. As a vital force in supporting the internationalization of agriculture, agricultural universities must align their translation talent training with industry demands and technological developments, exploring innovative pathways. This study takes the Master's program in Translation at South China Agricultural University as a case study, analyzing the current state and issues of the existing training model based on the concept of "Industry-Education-Research-Innovation." It proposes optimization pathways. The research finds that through the organic integration of school-enterprise cooperation, curriculum system optimization, research-driven initiatives, and innovation and entrepreneurship education, the professional competitiveness and innovative capabilities of translation talent in agricultural universities can be effectively enhanced. This study provides theoretical support and practical references for translation education in agricultural universities.
Keywords: AI era; Agricultural universities; Translation talent; "Industry-Education-Research-Innovation" integration; Training pathways

1 INTRODUCTION

In recent years, the rapid development of Artificial Intelligence (AI) technology has profoundly altered the ecology of the translation industry. The widespread application of Neural Machine Translation (NMT) technology has gradually shifted the working model of the translation industry from traditional human translation to human-machine collaboration. For instance, the translation quality of machine translation tools such as Google Translate and DeepL has continuously improved, meeting the translation needs in certain fields. Simultaneously, the proliferation of Computer-Assisted Translation (CAT) tools like Trados and MemoQ has significantly enhanced the work efficiency of translation professionals. However, the popularization of these technologies has also imposed new requirements on the skill set of translation talent.

Driven by AI technology, the demand for professionals in the translation industry is no longer limited to language conversion abilities but places greater emphasis on technological skills, critical thinking capabilities, and interdisciplinary knowledge backgrounds. Translators need to be proficient in CAT tools, capable of post-editing machine translation outputs, and possess the ability to evaluate translation quality [1][2]. Furthermore, the rapid iteration of AI technology necessitates that translation professionals have lifelong learning abilities to adapt to the industry's continuous changes. This shift in industry demand presents new challenges for translation education, as traditional translation education models struggle to meet the requirements of the AI era and require deep reform [3].

As an essential component of China's higher education system, agricultural universities bear the important mission of serving the "Three Rural Issues" (agriculture, rural areas, and farmers). With the deepening of China's rural revitalization strategy and the acceleration of agricultural internationalization, agricultural universities play an irreplaceable role in cultivating high-level translation talent that serves the agricultural sector. The training of translation talent in agricultural universities needs to align with agricultural characteristics and meet the demands of international agricultural development. For example, the international promotion of agricultural technology, the implementation of international agricultural cooperation projects, and international academic exchanges in agriculture all require specialized and field-specific translation talent. However, translation education in agricultural universities faces numerous challenges in practice. On one hand, the diverse backgrounds of students include those from literature, history, and philosophy, as well as those from agricultural disciplines, which raises higher demands for curriculum design and teaching content. On the other hand, translation education in agricultural universities must balance the cultivation of language skills with knowledge in the agricultural field, and this interdisciplinary talent development model is still in the exploratory stage. Additionally, with the proliferation of AI technology, translation education in agricultural universities must also integrate translation technology into the curriculum to enhance students' technical

application abilities.

With the support of the Ministry of Education's policies, the integration of industry and education, along with collaborative talent cultivation, has become an important direction for higher education reform. The "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" proposes to "promote a close integration of education with economic and social development, and promote the integration of industry and education." This policy provides crucial guidance for the reform of talent cultivation models in higher education. The concept of "integration of industry, education, research, and innovation" has further developed on the basis of industry-education integration, emphasizing the collaborative development of education, industry, research, and innovation. Specifically, this concept advocates for constructing a diversified talent cultivation model through school-enterprise cooperation, the integration of research and teaching, and innovation-driven approaches. This concept is particularly applicable to the field of translation education, as translation education itself possesses strong practical and applied characteristics. Through the integration of industry, education, research, and innovation, students' practical abilities, technical application skills, and innovative capabilities can be effectively enhanced, cultivating high-level talent that meets the demands of the AI era in the translation industry.

The proposal of the integration of industry, education, research, and innovation provides a new perspective for the development of translation education theory. Traditional translation education theories primarily focus on the cultivation of language abilities while neglecting the importance of technological and innovative skills. In the AI era, translation education needs to shift from a singular focus on language ability to a comprehensive cultivation of language, technological, and innovative abilities. This study explores the application of the integration of industry, education, research, and innovation in translation education, offering new ideas for the development of translation education theory. Furthermore, translation education in agricultural universities has distinct field characteristics, and its research outcomes can enrich translation education theory and provide references for translation education in other fields. For instance, issues such as how to integrate domain knowledge with translation teaching and how to incorporate technology teaching into translation education possess significant theoretical value.

From a practical perspective, this study aims to construct a translation talent cultivation model that meets the demands of the AI era, providing practical references for the reform of translation education in agricultural universities. By exploring the integration of industry, education, research, and innovation in the cultivation pathway, it can effectively address existing issues in translation education in agricultural universities, such as outdated curriculum systems, weak practical teaching, and insufficient innovation capability development. Specifically, the research findings of this paper can offer the following practical guidance for translation education in agricultural universities:

(1) How to optimize the curriculum system by integrating AI technology and agricultural field-specific content into translation teaching;

(2)How to enhance students' practical abilities through school-enterprise cooperation and project-based teaching;

(3) How to cultivate students' innovative capabilities through the integration of research and teaching.

2 CURRENT STATUS AND CHALLENGES OF TRAINING TRANSLATION TALENTS IN AGRICULTURAL FIELDS

2.1 Changes in the Demand for Translation Talent in the Industry

With the rapid development of artificial intelligence (AI) technology, significant changes have occurred in the production models and operational processes of the translation industry. New technologies, represented by neural machine translation (NMT), are fundamentally reshaping translation work, significantly enhancing both efficiency and quality. At the same time, the widespread use of computer-assisted translation (CAT) tools, such as Trados and MemoQ, is driving a shift from purely manual operations to a new model of “human-machine collaboration” [4] . These changes present new demands for talent in the translation industry, requiring not only solid language skills but also technical abilities and specialized domain knowledge. In this context, the core competencies of composite translation talents include the following three aspects:

(1) Language Ability: Excellent language skills remain the foundation of translation work, particularly reflected in the quality control and optimization of machine translation post-editing (MTPE).

(2) Technical Ability: The importance of technical skills in translation is increasingly significant. For instance, translators need to be proficient in using CAT tools, creating and maintaining terminology databases, and assessing the quality of machine translation outputs.

(3) Industry Knowledge: The trend towards specialization in translation necessitates domain knowledge, such as understanding specialized terminology and its usage in specific contexts in fields like law, medicine, and agriculture.

Agricultural translation, as an important branch of domain translation, requires general translation skills while also emphasizing specialized knowledge and practical abilities in agriculture. Currently, the pace of agricultural internationalization in China is accelerating, and the "Belt and Road" initiative has brought more opportunities for international agricultural cooperation, simultaneously generating a substantial demand for language services. For example, there is a need for translations of agricultural technical manuals, collaborative agricultural research reports between China and foreign countries, and on-the-spot interpretation at international agricultural conferences. Agricultural translation requires translators to accurately grasp the precise conversion of specialized terminology, as agricultural terms involve academic, applied, and practical aspects, often comprising statistical language while also

needing to incorporate localized agricultural knowledge [5]. Additionally, translators must be familiar with policy and application contexts to accurately convey details of cooperative policies, thereby reducing misunderstandings across multiple languages.

2.2 Current Status of Translation Talent Training in Agricultural Universities

Currently, translation education programs in agricultural universities still focus on language fundamentals and traditional translation techniques, neglecting domain-specific characteristics and technical skills. Most curricula consist of language proficiency enhancement, translation theory, and practice in both written and oral translation but lack systematic design that integrates agricultural characteristics into translation teaching, such as courses on agricultural terminology translation or case studies related to international agricultural cooperation. Although some universities have begun to introduce translation technology courses, these currently only cover basic tool operations, with deeper applications such as "corpus construction" and "terminology management" not yet widespread.

Practical teaching is particularly important for cultivating students' actual work abilities, yet agricultural universities show significant shortcomings in this area.

Firstly, the course content is overly simplistic: Most universities' practical courses remain limited to classroom simulation translation exercises and a few public translation classes, lacking opportunities for participation in real translation projects. Furthermore, the depth of collaboration is insufficient: The pace of cooperation between agricultural universities and enterprises in conducting translation practice is slow, with cases provided by enterprises mainly focusing on general fields, while support for agricultural-specific projects remains limited. Additionally, the evaluation mechanism is inadequate: Current teaching assessments mainly focus on "translation result quality," overlooking students' improvements in project management, technical application, and innovative capabilities, which hinders the comprehensive development of students' overall qualities.

The proliferation of AI technology has made technical skills a core component of translation education. However, agricultural universities are still lagging in this area, as evidenced by: (1) Low coverage of technical application courses, leading to insufficient practical skills among students in using CAT tools and developing corpora. (2) A lack of practical teaching in machine translation post-editing (MTPE). In the context of the rapid proliferation of AI translation results, many students view machine translation as a panacea but lack critical evaluation skills regarding its outputs. (3) The technical abilities of the teaching staff need enhancement. Some educators, due to a lack of technical background, focus primarily on superficial tool usage in technical courses, neglecting the integration of translation project practice to improve students' comprehensive abilities [6].

2.3 Main Challenges

The challenges faced in cultivating translation talent in agricultural fields include the following aspects:

First, the disconnect between theory and practice. Course content primarily focuses on language training and fails to adequately reflect the interdisciplinary, comprehensive, and technical skill requirements of the new industry demands, resulting in students lacking competitive employability in the agricultural domain. Compared to the international agricultural context, textbooks and case studies are often limited to general fields, lacking a comprehensive expression of agricultural project translation work.

Second, insufficient technical capabilities. The focus on technical skills in translation education has long lagged behind the actual development pace of the industry. On one hand, translation institutions allocate limited resources to technical courses, with instruction on CAT tools, terminology management systems, and other topics remaining at a basic level, and the emphasis on machine translation post-editing is noticeably lacking. On the other hand, training in core AI capabilities, such as training customized machine translation models or developing terminology databases, is notably absent.

Third, the lack of distinct industry characteristics. Although agricultural universities have clear objectives for translation education, there is a disconnect between the design of agricultural translation characteristics and students' needs. Agricultural knowledge is weak in course design, and the diversity and complexity of practical courses are insufficient to accurately address the translation needs of localized agricultural promotion and international cooperation.

In summary, AI technology has imposed composite capability requirements on the translation industry, while agricultural universities have yet to fully meet the market demands in terms of curriculum design, practical teaching, and technical training. The issues of disconnect between course content and practice, weakened technical capabilities, and insufficient agricultural translation characteristics indicate that the translation education system urgently needs reform to better serve the agricultural internationalization strategy and the new requirements of the translation industry.

3 CONSTRUCTION AND PRACTICE OF THE "INTEGRATION OF INDUSTRY, EDUCATION, RESEARCH, AND INNOVATION" TRAINING PATHWAY

The concept of "Integration of Industry, Education, Research, and Innovation" aims to organically combine industrial demand (Industry), higher education (Education), academic research (Research), and innovative practice (Innovation) to promote collaboration among multiple parties, facilitating a deep alignment between talent cultivation and real-world needs, thereby establishing a training model that adapts to the development of the times. Specifically, by advancing

comprehensive cooperation between universities and the translation industry, relevant research institutions, and innovation and entrepreneurship resources, we achieve multi-stakeholder participation in the translation education process, enhancing students' abilities to solve complex practical problems in the industry and cultivating high-level professional translation talents with strong comprehensive qualities. According to Nord's functional translation theory [7], the translation process should serve the function of the target text. This theory provides a clear direction for the cultivation of translation talents, emphasizing the organic integration of teaching and practice, and training students to design translation strategies based on different translation scenarios and text functions. For example, in the field of agricultural technology, the purpose of translation is significant, requiring students to possess practical abilities that extend beyond language alone. Constructivist learning theory emphasizes a student-centered approach, constructing knowledge in authentic contexts [8]. In translation education, introducing real projects and case-based teaching helps students think, analyze, and solve problems in practical situations, actively constructing a knowledge network and comprehensively enhancing their translation abilities. The "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" proposes to "promote a close integration of education with economic and social development, and promote the integration of industry and education." The "Several Opinions on Deepening the Integration of Industry and Education" (2017) also explicitly states that deepening the integration of industry and education is an important measure to promote the coordinated development of education and industry. In translation education, through school-enterprise cooperation and multi-stakeholder participation, a synergistic development of theoretical teaching and practical capabilities can be achieved, thus meeting the demands of society and the industry for translation talents. To implement the concept of "Integration of Industry, Education, Research, and Innovation," this degree program has conducted multi-level and multi-field practical explorations in the training of master's students in translation, forming a distinctive talent cultivation model.

3.1 Deepening School-Enterprise Cooperation to Promote the Integration of Industry and Education

This degree program has established a school-enterprise cooperation mechanism by signing collaboration agreements with multiple translation companies, agricultural enterprises, and international cooperation institutions, co-constructing translation practice bases to comprehensively enhance students' practical abilities and professional qualities.

(1) Undertaking real translation projects to enhance professional capabilities.

Under the guidance of full-time faculty, graduate students actively participate in translation projects from external enterprises and institutions, providing high-quality translation services for agricultural enterprises, research institutions, and researchers. For example, they have completed tasks such as translating agricultural technical manuals and localizing agricultural promotion documents, as well as undertaking interpretation and translation work for international agricultural cooperation conferences, such as the "China-Latin America Soybean Industry Technology Innovation Alliance," the "2023 Training Course on Environmentally Friendly Fertilizer Production and Application for Developing Countries," and the "International Seminar on Food Safety in the Meat and Poultry Supply Chain." These practices have enabled students not only to become familiar with the industry application of translation technologies but also to master actual project management skills, significantly enhancing their professional competence.

(2) Serving local economic development and supporting social practice.

Several graduate students have participated in the "Three Going to the Countryside" social practice activities, contributing translation support for local economic development in Guangdong Province's "Hundred-Thousand-Ten Thousand Project." Meanwhile, faculty and student teams have long-term responsibilities for translating agricultural project tasks, such as the translation of agricultural research reports and interpretation for agricultural culture conferences, covering fields like the "Precision Agriculture International Conference," the "Bay Area Future Agricultural Technology Innovation Conference," the "Ziqiao Terrace Dialogue with the World" Agricultural Culture Exchange Conference, and the World Cultural Heritage Protection and Application Conference. Through these activities, our faculty and students have not only enhanced the international influence of the translation master's program but also made positive contributions to the sustainable development of global agriculture and the inheritance of Chinese agricultural culture.

(3) Collaborating to establish joint training bases.

Additionally, to bring industry resources into the classroom, this degree program actively promotes deep involvement of industry enterprises in graduate training, constructing a school-enterprise collaborative education mechanism. Currently, the center has signed cooperation agreements with four translation companies and one public institution to co-establish translation internship bases, supporting students in conducting translation internships within enterprises and strengthening their practical abilities. The center also regularly invites industry elites to conduct lectures, exchange activities, and technical training for graduate students. For instance, it has organized workshops on information technology and translation, inviting industry experts to lead a two-day workshop for faculty and students, focusing on teaching corpus and artificial intelligence translation technologies, helping faculty and students grasp the latest industry trends and technological applications. Through the deep involvement of industry experts, students can understand the cutting-edge development trends in the translation industry, further enhancing their practical abilities and professional qualities.

3.2 Optimizing the Curriculum System to Enhance Practical Skills

Curriculum reform is a crucial aspect of cultivating applied translation talents. This degree program closely aligns with the training objectives for professional degree talents, establishing a curriculum system that is practice-oriented, focusing on enhancing students' translation skills and their ability to solve real-world problems. The optimization of the curriculum system is primarily reflected in the following aspects:

(1) Constructing a Scientific and Rational Curriculum Structure

The curriculum system consists of required and elective courses, encompassing both core content of translation theory and practice, while also integrating the agricultural characteristics of the school by offering targeted specialty courses. Core courses include "Introduction to Translation", "Translation Theory and Techniques", and "Interpretation Theory and Techniques", systematically cultivating students' foundational translation skills and theoretical literacy. Specialty courses leverage the school's strengths in agricultural disciplines, offering classes such as "Translation and Appreciation of Agricultural Culture", "Reading and Translating Agricultural Economic Literature", and "Agricultural Engineering Technology and Translation". These courses not only help students master specialized terminology and background knowledge in the agricultural field but also enhance their language service capabilities in agricultural promotion and international cooperation.

(2) Emphasizing the Integration of Agricultural Characteristics and Translation Practice

To highlight the school's agricultural characteristics, the curriculum design particularly emphasizes the comprehensive training of agricultural background knowledge and translation skills. For instance, "Translation and Appreciation of Agricultural Culture" cultivates students' language expression abilities in cultural communication through the translation and analysis of classic texts related to Chinese agricultural culture; "Reading and Translating Agricultural Economic Literature" focuses on the practical translation of literature in the agricultural economics field, helping students become familiar with agricultural economic terminology and translation strategies; "Agricultural Engineering Technology and Translation" enhances students' language service capabilities in agricultural technology promotion through translation training of agricultural technical manuals and engineering literature. These courses are taught by instructors with professional research backgrounds and rich translation practice experience, employing case-based teaching and project-driven methods to introduce real translation tasks from the agricultural field into the classroom, thereby helping students improve their translation skills in authentic contexts.

(3) Introducing Modern Translation Technology Courses to Enhance Technical Application Skills

With the increasing demand for technical skills in the translation industry, this degree program has established an AI translation technology course titled "Modern Translation Technology," addressing the shortcomings in technical skill training in traditional education. The course covers the use of machine translation, computer-assisted translation (CAT) tools, and corpus construction and management, helping students master the basic operations and application methods of translation technology. Through practical training, students can proficiently use mainstream translation tools (such as Trados, MemoQ, etc.) and understand the limitations of machine translation and post-editing techniques, thereby enhancing their competitiveness in technology-driven translation projects.

(4) Building a Translation Practice Case Database

To improve translation practice skills and cultivate high-level professional talents, this degree program continuously promotes the construction of a translation practice case database, supporting translation teaching and research with abundant practical resources. Currently, two distinct teaching case databases have been established: the "Agricultural Translation Teaching Case Database" and the "Teaching Case Database for 'Chinese-English Language Comparison and Translation' Based on Artificial Intelligence Technology Development". The construction of the translation practice case database not only enriches translation teaching resources but also achieves a close integration of theory and practice. Through the discussion and practical application of specific cases, students acquire the ability to solve real translation problems through imitation and summarization, while also gaining in-depth knowledge in their professional field, fully reflecting the application-oriented and practical characteristics of this degree program's teaching.

(5) A Diversified Course Evaluation System to Strengthen Practical Skills

To ensure the practical effectiveness of curriculum reform, this degree program has introduced a diversified assessment approach in course evaluation, focusing on the examination of students' practical abilities. Both core and specialty courses include translation projects as assessment components, requiring students to complete real translation tasks, thereby cultivating their project management and problem-solving skills. In the "Modern Translation Technology" course, students are required to complete practical tasks such as corpus construction and translation tool operation, ensuring that their technical skills meet industry standards.

By optimizing the curriculum system, our university's translation master's degree program has achieved an organic integration of theory and practice, particularly under the promotion of agricultural specialty courses and modern translation technology courses, cultivating students' comprehensive abilities in agricultural promotion, international cooperation, and technology-driven translation projects. This curriculum reform not only meets the demand for cultivating applied translation talents but also lays a solid foundation for students' future career development.

3.3 Promoting Innovation through Scientific Research to Enhance Comprehensive Abilities

Research-driven initiatives are vital for cultivating high-level, application-oriented translation talents and are a key pathway to improving students' innovative capabilities. Our university adopts a "research feeding back into teaching" model, closely integrating faculty research projects with students' practical training, thereby bridging teaching and

research. This approach fully leverages the role of research in fostering students' innovative thinking, practical skills, and academic literacy, specifically manifested in the following aspects:

(1) Integration of research projects into teaching to stimulate innovative thinking

Faculty members combine their individual research projects with course instruction and student practice, providing students with authentic opportunities for research and translation practice, thereby igniting their innovative potential in solving real-world problems. For instance, students participated in the national social science fund project led by faculty, receiving comprehensive training in experimental design, data analysis, and translation practice. This not only enhanced students' research capabilities and translation skills but also cultivated their innovative thinking in identifying problems, formulating hypotheses, and validating solutions throughout the experimental process. Additionally, students engaged in research projects such as "Building an Agricultural Academic English Corpus," gaining extensive experience in data processing, terminology extraction, and translation practice, while familiarizing themselves with specialized terminology and translation strategies in the agricultural field. Through these research projects, students are able to closely connect theoretical knowledge with practical application, continually exploring new methods and ideas in addressing complex translation challenges, significantly enhancing their innovative capabilities.

(2) Bilingual corpus construction to cultivate technological innovation abilities

Driven by research topics, students collaborated with faculty to establish a bilingual corpus, completing extensive processing of Chinese and English agricultural technical texts. In this process, students learned techniques such as data cleaning, terminology extraction, and text annotation, mastering the use of corpus tools, which significantly improved their technical skills and translation efficiency. More importantly, the corpus construction process provided students with a practical platform for technological innovation. For example, students experimented with optimizing terminology extraction methods during corpus construction, explored applications of the corpus in translation assistance tools, and proposed new ideas for terminology management specific to agricultural translation. Through the development of the corpus, students not only accomplished a large volume of agricultural technical text translation tasks but also applied their translation outcomes in agricultural promotion and international cooperation, demonstrating a close integration of research and practice. This cultivation of technological innovation capability ensures students' competitiveness in technology-driven translation projects while injecting new vitality into the technological development of the translation industry.

(3) Research collaboration and sharing of academic achievements to enhance academic innovation capabilities

Through participation in faculty-led research projects, students not only improved their practical abilities but also achieved significant academic outcomes. For example, students collaborated with faculty to write and publish academic papers covering translation theory, corpus applications, and agricultural translation practices. These achievements not only enhanced students' academic capabilities but also contributed to the research level and societal impact of the degree program. In research collaborations, students learned how to propose innovative research questions from an academic perspective through in-depth communication with faculty, and formed systematic research outcomes through data analysis and theoretical validation. Furthermore, the translation experience and technical skills accumulated by students in research projects were directly applied to agricultural technology promotion, international conference translation, and other practical work, effectively transforming research outcomes into real-world applications. This research collaboration model not only provides students with opportunities for academic research but also helps them convert research findings into practical applications, further enhancing their professional competitiveness and innovative capabilities.

(4) Diverse practices driven by research-based teaching to promote comprehensive development of innovative abilities

Through research-driven teaching, our university has established a diversified teaching practice model that comprehensively promotes the development of students' innovative capabilities. Faculty members introduce practical tasks from research projects into classroom teaching, allowing students to learn research methods and technical applications while completing translation tasks. For instance, in translation courses, students participate in translation tasks from research projects, mastering practical operational methods of translation technology and enhancing their translation abilities in real contexts. Simultaneously, faculty members utilize the professional knowledge and practical experience accumulated through research projects to feed back into course instruction, optimizing teaching content to ensure alignment with industry needs. By participating in research projects, students can continuously explore new translation methods and technical application pathways both inside and outside the classroom, forming a virtuous cycle between teaching and research. This diversified practice model not only allows students to gain high-quality learning experiences both in and out of the classroom but also provides solid support for their future career development. Through research-driven teaching, students' innovative capabilities are comprehensively enhanced, enabling them to propose unique solutions to complex translation tasks and demonstrate greater creativity in both technical and academic fields.

Through the "research feeding back into teaching" model, this degree program has achieved deep integration of research and teaching, enhancing students' translation practice abilities and academic research competencies while also making significant progress in cultivating students' innovative capabilities. By participating in research projects, students can identify problems in practice, propose innovative solutions, and transform research outcomes into practical applications. This model not only provides students with a high-quality learning and practice platform but also strongly supports the cultivation of high-level, innovative translation talents, injecting new vitality into the translation industry and societal development.

4 IMPLEMENTATION EFFECTS

After years of exploration and development, this degree program has achieved remarkable results in mentor team building, talent cultivation quality, employment outcomes, and service to local economies, while also realizing positive social effects in cultural dissemination and moral education.

(1) Significant achievements in mentor team building

Through the simultaneous advancement of research and teaching, the mentor team of this degree program has made significant progress. The mentor team has undertaken over 50 research projects, with more than 15 at the provincial or national level, including 2 national social science fund projects. The project areas cover high-level fields such as translation practice, ecological linguistics, and experimental research in pragmatics, forming a favorable situation where research promotes teaching and guides student cultivation. Additionally, the team has actively produced high-level academic outcomes, publishing over 100 papers on topics including pragmatic translation, agricultural technology translation, classical literature translation, machine translation, and ideological education in translation courses. Faculty members in this degree program have published 28 monographs, translations, and textbooks, with more than 7 academic works being distinctive and closely related to the field of translation studies. These research outcomes not only directly support translation course instruction but also provide solid academic backing for graduate training, enabling students to break traditional thinking in academic research and gain innovative guidance and inspiration.

(2) Year-on-year improvement in talent cultivation quality

This degree program has consistently emphasized a balance between theory and practice in the graduate training process, continuously refining training programs and teaching systems to gradually achieve the goal of promoting development through quality. Regarding thesis topics, our university places great importance on the practical orientation and academic value of the topics. All theses are strictly standardized, content-rich, and focus on practical issues in agricultural translation, covering various fields such as agronomy, forestry, veterinary medicine, and resource environment. These theses not only highlight the distinctive characteristics of our university's agricultural disciplines but also aim to solve real industry problems. Students are able to summarize the challenges encountered during the translation process in their theses, generalize experiences and strategies, and propose innovative solutions, thereby significantly enhancing the practical significance and innovative capability of their theses. The format of the theses is diverse, preserving the systematic nature of academic research while closely aligning with translation practice needs, allowing for various forms such as translation project reports, translation experiment reports, translation practice reports, and research papers to meet different training requirements. Over the years, all theses have passed plagiarism detection and received favorable evaluations in random assessments, reflecting the degree program's strict control over academic quality.

In specific training processes, this degree program emphasizes both the teaching of translation theory and the cultivation of application abilities, particularly focusing on enhancing students' practical translation skills. The college encourages students to actively participate in the National Translation Professional Qualification (CATTI) certification exams. Currently, the examination participation rate for this degree program is 100%, with 3 students from the 2024 cohort having already obtained Level 2 translation certificates. Through participation in translation certification exams, students are able to proficiently master the application methods that combine theoretical tools with translation skills, strengthening their professional translation abilities and comprehensively enhancing their employment competitiveness.

Moreover, to ensure the quality of graduate training, this degree program has strengthened supervision and guidance throughout the entire training process. Specifically, during the training process, strict implementation of the graduate training program is enforced, monitoring the execution of training plans to ensure that the objectives of course instruction are clear and meet industry needs. Simultaneously, the evaluation system for the entire graduate training process involves participation from mentors, the college, and the university, providing comprehensive guidance and supervision for teaching, practice, thesis writing, and defense. This comprehensive training system effectively ensures the quality of teaching and practice. Thanks to this rigorous assurance mechanism, students' academic abilities and practical skills have significantly improved, achieving a high degree of alignment between professional development and social needs.

(3) Significant employment outcomes with high matching degree for composite talents

Graduates of the translation master's program cultivated by this degree program have demonstrated remarkable employment outcomes due to their solid language foundation and rich translation practice experience, consistently ranking among the top in the university's graduate employment rates for several consecutive years. The overall employment destinations of graduates are highly aligned with societal demands. Graduates not only possess excellent translation abilities but also meet the demand for composite talents due to their knowledge backgrounds in agriculture, ecology, and China's national conditions. Graduates primarily enter the language service industry, translation education sector, agricultural enterprises and institutions, and agricultural economic departments, while also expanding into financial services, new energy, and cross-border e-commerce sectors. According to the McKinsey employment report, the translation master's program exhibits multiple advantages such as "high employment rates, high job satisfaction, clear career development paths, and high social contributions." As of now, student employment covers over 10 provinces and cities nationwide, with a focus on the Guangdong-Hong Kong-Macao Greater Bay Area, providing high-quality talent support for local economic development.

(4) Serving national strategies and local economic development

This degree program, based on the university's strong agricultural characteristics, actively responds to the national "Rural Revitalization" strategy and the demands of ecological civilization construction. Through university-local cooperation and teaching practice, it has made significant contributions to local economic development. In the past five years, the program has trained approximately 100 high-level translation talents, with employment destinations covering key industries such as education, new energy, and cross-border e-commerce, primarily centered in the Guangdong-Hong Kong-Macao Greater Bay Area and covering more than 10 provinces and cities nationwide. The graduate team has conducted in-depth rural practice activities, providing translation support for Guangdong's "Hundred-Thousand-Ten Thousand Project," thus contributing to local economic development. Furthermore, faculty members in this degree program actively undertake external translation demands, completing a large volume of translations for agricultural technical documents and research literature, providing quality services for agricultural enterprises and research institutions, and becoming an important bridge for agricultural research and international communication.

(5) Significant achievements in cultural dissemination and moral education

The degree program comprehensively implements the fundamental task of moral education, emphasizing the important role of cultural dissemination in cultivating internationally-oriented composite talents. The curriculum integrates outstanding traditional Chinese culture and socialist core values, leveraging the advantages of foreign language disciplines to allow students to experience cultural identity and a sense of mission in translation education. For example, graduate students have participated multiple times in translation work for international cooperation projects such as the China-Latin America Soybean Industry Technology Innovation Alliance and the "2023 Training Course on Production, Application, and Demonstration of Environmentally Friendly Fertilizers for Developing Countries," using fluent and precise translation to tell the story of China in the new era and promote international exchanges and mutual learning. The degree program also fully leverages the role of language education in cultural diplomacy, promoting translation research and practice that integrates with China's development philosophy, focusing on cultivating high-level translation talents that can serve the national language strategy.

In summary, the translation master's program at South China Agricultural University has demonstrated the effectiveness of its development through achievements in mentor team building, quality improvement in talent cultivation, employment outcomes, economic contributions, and cultural dissemination. It has played a positive role, especially in serving local economies and national development, cultural dissemination, and the cultivation of composite innovative talents. These achievements showcase the program's potential for continuously promoting the integration of innovation, practice, and social contribution in the future.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

The project was supported by The 14th Five-Year Plan Project of Guangzhou Municipal Philosophy and Social Science, "Research on the Media Construction and Communication of Guangzhou's International Image" (Project No. 2023GZGJ230).

REFERENCES

[1] Wang H, Xie F. Research on the Innovation of Translation Education Practice Models Driven by Large Language Model Technology. Chinese Translation, 2024, 45 (02): 70-78.

[2] Ye H. Reform and innovation of translation teaching in the era of artificial intelligence. In Research on the Development and Innovation of Foreign Language Education and Translation (15). Shanghai University of Engineering Science, 2024.

[3] Liu, Yu J. Foreign Language and Translation Education in the Era of Artificial Intelligence: Discussion and Reflection on the Cultivation of Foreign Language and Translation Talent. Contemporary Foreign Language Education, 2024, (02): 1-11.

[4] Moorkens J. What to expect from Neural Machine Translation: A practical in-class translation evaluation exercise. The Interpreter and Translator Trainer, 2018, 12(4): 375–387.

[5] Dai W, Li C. Exploration of the training model for agricultural translation talents under the background of new liberal arts: A case study of J University’s MTI talent cultivation. Jiangsu Foreign Language Teaching Research, 2022, (04): 8-11.

[6] Ou Y. Research on the construction of English translation courses in agricultural-related industries in higher education. Rural Economy and Technology, 2019, 30(19): 319-320.

[7] Nord C. Translating as a Purposeful Activity: Functionalist Approaches Explained. Shanghai: Shanghai Foreign Language Education Press, 2021.

[8] Jonassen D H. Objectivism versus constructivism: Do we need a new philosophical paradigm? Educational Technology Research and Development, 1991, 39(3): 5-14.