

# **Lecture Notes in Management Science**

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**Volume 66**



A stylized world map in shades of gray, overlaid with a network of glowing white lines and circular arcs. Small white star-like points are scattered across the map, suggesting global connectivity or data flow.

# **Lecture Notes in Management Science**

**2016 ISSGBM International Conference on Information,  
Communication and Social Sciences (ISSGBM-ICS 2016)**

**October 8-9, 2016, Dubai, United Arab Emirates**

*Edited by*  
**Harry Zhang**

**Singapore Management and Sports Science Institute**

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## **ISSGBM-ICS 2016 Preface**

Welcome to 2016 ISSGBM International Conference on Information, Communication and Social Sciences (ISSGBM-ICS 2016), organized by Singapore Management and Sports Science Institute, Singapore, Academic Conference Institute, USA and Hong Kong Education Society, Hong Kong.

The conference which will be held in the wonderful in Dubai, United Arab Emirates, during October 8-9, 2016, aims to bring together experts from the academia and industry to share their research and discuss about current trends, new innovations, challenges and solutions in the field of Information, Communication and Social Sciences. We hope that the conference results constituted significant contribution to the knowledge in these up to date scientific field.

ISSGBM-ICS 2016 covers a wide range of fields in Information, Communication and Social Sciences, including major topics as follows: 1) Management; 2) Culture, Art and Sports; 3) Information Technology and Social Sciences; 4) Education Reform and Exploration.

The selected papers presented at ISSGBM-ICS 2016 will have to pass a rigorous review process. First, 185 submitted papers will be pre-screened for conformity with submission guidelines and for overall appropriateness. Papers that pass the initial screening process will then be double-blind reviewed by three PC members in order to ensure that both authors and reviewers remain anonymous during the review process. Only expert specialists are qualified to perform the reviews. Finally, 59 papers were selected as regular papers, which are based on the outcome of the review process and recommendations of the members of the program committee. The acceptance rate represents 31.9 %.

We will be thankful for the contributions of all ISSGBM-ICS 2016 participants and presenters at this international event. In particular, we would like to take this opportunity to express our heartfelt thanks to international scientific committee and the expert reviewers without whose help we can't achieve such great success.

Finally, we thank you for your contribution to the ISSGBM-ICS 2016 congress, and we hope you have a wonderful and richly rewarding conference experience in Dubai, United Arab Emirates,. I look forward to your participation and continued engagement at future ISSGBM-ICS 2017.

With our warmest regards  
Harry Zhang



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# **Chapter 1: Management**



## Acceptance of Risk of Innovations as an Important Assumption of Innovative Organization

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**Keywords:** Innovation; Risk; Innovative organization; Diversification of risk

**Abstract.** Article is focused on risk of innovations. Acceptance of risk of innovations is one of the key assumptions of innovative organization. Article explains that accepting risk does not mean a willingness to gamble. It means the willingness to consider carefully risky opportunities. It also includes the ability to make risk-assessment decisions, to take calculated risks and to include them in a balanced portfolio of projects, some of which will have a low element of risk and some a high degree of risk. Article contains also sources of innovation risks (decrease of demand, cost increase, changes in technology, legislative and macroeconomic changes) and types of risk (manufacturing risk, risk of sustainability of innovations and market risk). The last part of article describes possible options of diversification of risk of innovative project portfolio (size of innovations, time, financial requirements, and sources of funding, riskiness).

### 1. Introduction

Company environment in which innovation is developed and implemented has significant impact on success or failure of innovation. There are organizations that are dedicated to innovation on a large scale. On the other hand, there are organizations that are less dedicated to innovation or their facilities are not developed enough. Every organization is different, but there are some common components (Fig. 1), which create a supportive environment for the development and implementation of innovations and describe innovative organization:

- *Management* – senior management's relationship to innovation must be positive. Management must inspire subordinated to innovation by being innovative themselves.
- *Creative environment* – a prerequisite for innovative solutions in an organization is the environment that encourages innovation. Senior management participates a great deal on building this element.
- *Personalities and team* – in any organization, we can identify a few key individuals who are the initiators of innovative designs. These are the key persons who promote innovative designs.
- *Training and development* – innovative organization supports innovation also through education and development of human resource. It is important to focus on expanding current experience and developing new skills.
- *Communication* – a prerequisite for innovation in the company is a good internal communication, based on a free flow of information in horizontal and vertical directions in order to spread ideas.

- *Organizational structure* – a strong supporting factor is an appropriate organizational structure.
- *Learning organization* – innovation must be seen as a cycle of learning. Education within the organization should focus on the ability to drive innovation.
- *Acceptance of risk* – the last element of an innovative organization is will to take the risk of failure and tolerance of possible failure. This article is focused exactly on this component of innovative organization.

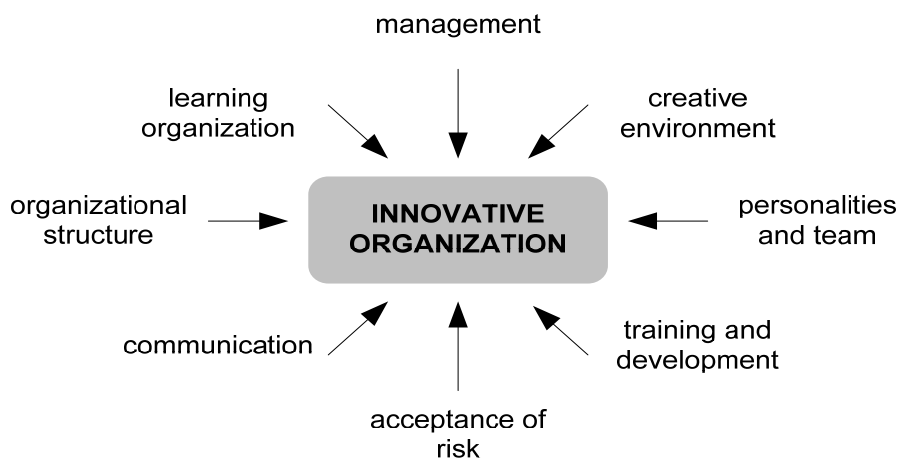


Fig.1.Components of Innovative Organization

Source: own processing

## 2. Risk of innovation

Innovations are inevitably related to the risk of failure. It is virtually impossible to innovate, while not being willing to accept some degree of risk. The risk is on one side connected with the hope of receiving special benefits and on the other, with the danger of failure, resp. loss. Each innovative organization will meet with failure resulting from innovation. Through thorough preparation of the innovation process, it is possible to minimize the risk of failure, but it is impossible to avoid it completely. This is not a reason for an organization not to innovate. As Peter F. Drucker said: „*There is a risk that we can afford to undergo and a risk that we cannot afford to not undergo.*“ Mark Zuckerberg says: „*The biggest risk is to take no risk. A strategy that that leads to failure in today's rapidly changing world is not to take risk.*“

Accepting risk does not mean a willingness to gamble. It means the willingness to consider carefully risky opportunities. It also includes the ability to make risk-assessment decisions, to take calculated risks and to include them in a balanced portfolio of projects, some of which will have a low element of risk and some a high degree of risk [1].

Also in case of assessment of risk related to innovation, the principle that the greater the risk a company expects in the context of innovation, the bigger benefit can be achieved through innovation (if successful). Conversely, if a company undergoes minimal risk in connection with the planned innovation, then the expected benefit of innovation is generally lower.

The first case is typical for the so-called *radical innovation*, when business undergoes radical change. If the innovation is successful, the organization gains a significant competitive advantage. If not, they usually suffer a significant loss.

The second case is typical for the so-called *incremental innovation*, when a company innovates the original object of innovation through continual upgrades. If the implementation of the innovation is successful, the company usually experiences some benefit (but not a radical one). However, the



cumulative benefit of incremental innovation is generally higher than the benefit from occasional radical innovation. In view of the fact that the incremental improvement innovation derives from something that is known, it is related to lower their risk of failure when compared with radical innovation.

In connection with the acceptance of certain risks of innovation, we also meet the fact that the return on resources invested in innovation is often longer than originally anticipated. Then it is necessary to assess other aspects besides the payback period, for example new market entry, market share growth, a range of strategic benefits, more efficient functioning of internal processes and the like [2].

A company undertaking a final decision on a particular innovation typically evaluates several possible options and chooses the one it deems the most appropriate. When choosing the final option, a company should decide also with respect to the relationship between innovation and the strategic objectives of the company. It should answer the following questions:

- Will the planned innovation support some of the strengths of the company?
- Is there not some planned innovation dependent on something that is considered a company's weakness?
- Is the company likely to succeed in the competition in regard to innovations?
- Will the innovation develop a system of direct or indirect support to business strategy?
- Is there a customer (product innovation) or user (process innovation) for the forthcoming innovation?
- Is the company strong enough to cope with potential risks?
- Does the company have an appropriate environment for the innovative project to be well defined, planned and successfully implemented in the framework of the internal environment?
- Does the project have a real chance of being completed on time, without exceeding the planned budget, while ensuring the objectives? [adapted from 3]

### 3. Risk classification

Risks associated with innovation arise for different reasons. The most common sources of these risks are:

- *Decrease in demand* – decrease in demand may be due to the entry of substitute products, change of consumer preferences, reduction of customer purchasing power and the like.
- *Increased costs* – increase in input prices (material, energy, wages and so on).
- *Changes in technology* – change of materials that are used, change of technological processes and so on.
- *Macroeconomic and political environment* – changes in laws and macroeconomic indicators (inflation, GDP, amount of tax rates and the like) [4]

These factors cause the most frequently occurring risks associated with innovations that are presented in the following table (Table 1).

Tab.1.Classification of risks of innovation

Type of risk	Potential risks
Production risks	Deficiencies of structural or technological nature that cause poor quality production.
	Real production costs are higher than planned.
	Poor project management.
Risks to the sustainability of innovations	Insufficient potential to further improve the product. That means inability to secure incremental innovation.
	Inadequate services and additional services to innovation.
Market risks	Innovation is not sufficiently compatible with corporate strategy.
	Inappropriate timing of innovation (creation of

	discontinuous follow-up with a time gap).
	Limited size of the market without growth potential.
	Lack of marketing activities.
	Not considering changes of the market.
	Wrong estimation of the competitors' reaction to new products.
	Tightening legislation.

Source: adapted from <http://www.zaict.sk/content.php?id=29&lang=sk>

#### 4. Innovation project portfolio risk diversification

Most innovative companies make several innovations simultaneously so we can conclude that they create some portfolio of innovation, resp. innovative projects. Therefore it is necessary to deal with the risk of the entire portfolio of innovations with a goal to minimize it. Minimizing risks can be secured by diversifying the risk of entire portfolio and the essential diversification criteria are:

- *Size* – portfolio should contain innovation of different sizes. This should include both large and small innovative projects. If the company only focuses on large innovative projects, their failure could cause existential problems to the company. Concerning size we assess mainly organizational complexity and the expected impact and novelty of innovation (incremental vs. radical innovation).
- *Time frame* – innovation portfolio composition should have a suitable ratio between short-term and long-term projects. Short-term projects generally mean less benefit and represent a small step towards achieving the goals, while long-term innovation projects generally produce the anticipated value by jump. However, if they fail they represent problems of great scale.
- *Financial difficulty* – portfolio of innovation should not be composed only of innovations which necessitate the use of large amounts of funds. It should be composed of financially demanding and less demanding innovations.
- *Sources of funding* – composition of the portfolio of innovation should not be composed only of innovative projects financed from foreign sources. When financing innovation from own resources, a company must take into account the opportunity costs of equity.
- *The riskiness* – the balance of the portfolio in terms of risk of individual innovation projects. The portfolio should be composed not only of high-risk innovations [adapted from 5]

Despite the implementation of various activities aimed at minimizing the risks associated with innovation a failure occurs, resp. innovation does not yield the desired benefits.

#### 5. Conclusion

Each failure should be followed by its analysis. Not in order to find the culprit and punish him, but in order to learn from this situation and prevent it in the future. Based on thorough analysis, it is possible to identify certain warning signs that pointed to the unfavorable development of the situation and were overlooked by the team members. Identification of overlooked warning signs will help to avoid failure in the future. Competent persons have to accept the presence of risk factors when deciding, especially in relation to decision-making on innovation. Risk means the possibility of loss or some drawback. However, if they will not be willing to take risks, they cannot expect an outcome in the form of success. Many organizations create a system of measures that allow them to exclude failure in order to minimize the potential risk. Such organizations, however, do not achieve significant success, as their cautious approach eliminates all risk events that usually generate greatest achievements [6].

## 6. Acknowledgement

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# Theoretical Basis of Credit Risk Management in Export Transactions

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**Keywords:** Credit risk; Credit risk management; Default; Export transaction; Payment conditions.

**Abstract.** The article deals with selected issues of risk management in chosen area of foreign trade, specifically with credit risk, which companies involved in export transactions must face, and chosen aspects of its managing at the theoretical level. In this connection, export transactions represent a kind of foreign trade transactions consisting in export of goods and services outside the domestic economy and credit risk management will be considered as a part of overall risk management that may be defined as *“a process, effected by an entity’s board of directors, management and other personnel, applied in strategy settings and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives”* [1]. Purposely it will be abstracted from international investments activities both tangible and financial, because the managing of credit risk in such kind of international operations may have specific features.

## 1. Introduction

Business and financial relationships between companies (regardless of their industrial taxonomy) are characterized by the presence of risks respectively factors that determine these risks [2]. In connection with these relations, the risk is perceived rather negatively, although it can occur even in a positive way not only from the theoretical (statistical) point of view, but also in the real economic world. From the geographic point of view, companies are exposed to risks related to the domestic trade or financial transactions and foreign trade and foreign investments. The proportion of risks’ presence involved in domestic and foreign transactions varies and generally, foreign trade and financial transactions are considered to be more risky than domestic ones. Despite that, the participation in the foreign trade and investments is almost existential for companies nowadays. It follows that risk management in the foreign trade should play an important role in business and financial relationships. In many cases an assistance of the state represented by the government and specialized state institutions is desirable.

## 2. Risks involved in export transactions

Companies involved in export business transactions face many risk situations and all of them may have a significant impact on the success or failure of export transactions in terms of the difference compared to the expected effect. Risks of export transactions are usually classified into three main classes: territorial (country), market, and commercial risks [3] and regardless of their forms of expression they usually result in financial losses of exporter.

## 2.1 Credit risk and managing of credit risk

Individual areas of risks involved in export operations are a part of a *comprehensive risk assessment* of each individual business case at all stages of export transactions (pre-contractual phase, contracting phase, phase of contract fulfilment by both parties). The main objective of risk management in export transactions is to identify any potential risk events that could have adverse consequences, measuring of defined risks and taking appropriate actions, which means to decide whether a transaction will not be realized or will be undertaken and if, under what conditions (payment conditions, including appropriate suggestions to eliminate, share or transfer risks to a third party – if it is possible). It also includes credit risk management. *Credit risk* (default, counterparty, or performance risk) is present in purely commercial but also in financial (investments) relationships. In the context of foreign trade it is considered as a part of commercial risk that arises from the unwillingness or inability of a foreign business partner to comply contract terms. Important factors affecting the range of commercial risk include a reliability of business partners, as well as the level of legal reinsurance of exporter's claims. Commercial risk may prove as risk of non-acceptance of goods, commodity risk, transportation risk, and mainly as credit risk. In connection with export transactions, credit risk is analysed with a crediting of foreign business partner and creation of account receivables in the foreign trade. It can be broadly defined as “*the potential that a contractual party will fail to meet its obligations in accordance with the agreed terms*” [3], simple said as a possibility of obligor's payment delinquency or default. Along with this broader perception of credit risk, it is necessary for the exporter to take into account the level of portfolio concentration of credit business partners. Following this, credit risk of individual foreign business partner is determined by subtypes of credit risk – country and industry risk. *Country risk* arises from an exposure to foreign partners in countries that have legislation, business codes and standards that differ from those of exporter including political, economic, technical, and enforcement risk. In some cases (e.g. in case of expensive and long-term transactions) it is also important to consider a business partner's competitive environment. *Industry risk* applies particularly when the international economy (or just the economy of a partner) is in the recession that subsequently affects certain industries. Industry structure may have credit consequences because of supply chain within which most companies operate in. A high level of exporter's credit risk exposure may endanger its solvency and financial stability, at worst, business existence, possibly a chain reaction of insolvency of other entities that are in business or employee contacts with the exporter (so-called *domino effect*). *From the theoretical point of view*, credit risk is considered as diversifiable, or unsystematic risk and statistically follows a symmetric probability distribution. Formally, it can be expressed as a product of exposure to a business partner, who may possibly default or suffer an adverse change in its ability to perform (inherent risk) multiplied by the likelihood that this partner will default on his obligation (risk of loss), and the recovery rate that expresses, how much can be retrieved if a payment delinquency or default take place [4, 5].

$$\text{credit risk} = \text{exposure} \times \text{probability of default} \times (1 - \text{recovery rate}) \quad (1)$$

*Credit risk management* should adequately support the export's decisions on allocation of capital to receivables individually for each business case – decisions on the amount of trade credit limit based on the financial and economic power and stability of importer while taking into account own financial and economic possibilities, capacity and given (acceptable) level of credit risk exposure. *Weissova et al.* emphasizes inter alia the nature of customers depending on in which market they are operated – commercial credit risk management in B2B markets (more typical for export transactions) and consumer credit risk management in B2C markets [6]. The basis of credit risk management is relatively quick and reliable assessment of the creditworthiness of importer. After that follows credit risk assessment in the context of other identified risks (country, industrial) and choice of payment and assurance instruments that could be possible applied in a given export transaction. Of course, its task is also to properly manage all enterprise receivables as a single entity – portfolio of receivables.

## 2.2 Methods of credit risk measuring - determine the creditworthiness of a business partner

By verifying the creditworthiness of business partners, the exporter protects own business, reduces the risk of default and of non-payment receivables, and thus the risk that exporter's profitability will be negatively influenced by claims against business partners that find themselves in bankruptcy and restructuring, or are not willing to pay although they are solvent. Verifying the creditworthiness is necessary in case of both existing and potential partners and it is an integral part of credit risk management. The result of this phase of credit risk management is *setting a limit of trade credit, setting a maximal acceptable maturity day of receivables, setting a payment method, choosing a form of reinsurance of trade credit, setting a recovery practise, and additional contractual agreements* (e.g. on contractual penalty in case of late payments, on the assignment of receivable etc.), while accepting the identifying level of partner's creditworthiness and of course its needs.

The credit evaluation of a business partner is performed on the basis of adequate information by applying individual evaluating methods. Information can be obtained from publicly available information sources, can be provided by a business partner on demand, or from commercial sources that are usually paid. Information on the commercial basis in the foreign trade are usually provided by specialized financial or non-financial institutions. Their advantage is that they as a general rule are able comprehensively evaluate a business partner and thus exporter does not need to create own complex information system and sophisticated system of credit risk evaluation (providing credit rating is usually place in a company's internal risk management system; depending on valuating scale – at a high level of default risk the cashless order or financial limit on one order is locked up and such business is assessed individually or refused at all). The provided information may have financial/non-financial or quantitative/qualitative character. In case of the Slovak exporters, this kind of information provide e.g. international information agencies that operate in the Slovak market (*Coface, Creditreform, Bisnode B&D, CRIF* etc.), some commercial banks, factoring/forfeiting institutions, and insurance companies. An important role plays the *Export-Import banks of the Slovak Republic*, which except commercial information provides to the Slovak exporters many other information free of charge and also financial and assistance services. Information on foreign markets and trade free of charge are also provided by the *Ministry of Economy, Ministry of Foreign and European Affairs, Slovak Investment and Trade Agency, Slovak Guarantee and Development Bank, Slovak Business Agency, Slovak Innovation and Energy Agency, and Slovak Chamber of Commerce*.

There are a variety of available credit risk measuring methods (models) and their categorization is not strict. Based on the analysis of scientific literature and their common features, they may be grouped into: analytic methods, behaviour models, external rating methods, modern methods based on market data or VaR approach, and expert systems. In practice, combination of various methods are usually preferred in order to identify a right level of stress factor for given export transaction (or to a group of homogenous transactions) to the expected default rate.

*Analytic methods* primary include financial statement analysis – principal assessment methodology of a business partner's creditworthiness. Information sources for analysis are financial statements that provide the fundamental information on company's assets, equity, liabilities, incomes, outcomes, revenues, costs, and earnings. Usually, financial statements of corporations in most developed economies are publicly available, or can be get from a business partner on a request. In the process of identifying the level of credit risk, chosen financial ratios are quantified from the area of liquidity analysis, long-term solvency analysis, profitability analysis, activity and overall assets analysis, and CF analysis. In some cases, important information may be uncovered by a decomposition of synthetic financial ratios, e.g. DuPont models, EVA decomposition etc. The analytic methods include also comprehensive models of creditworthiness assessment of a business partner or predict future possibility of bankruptcy. These methods have been developed at a more systematic and formal level. The first group of methods generally evaluate current creditworthiness under exactly determined rating scale of financial indicators that entering into methods, e.g. *Kralick quick test, Tamari model, AGR model, Horrigan model* etc. The second group of methods have inter

alia a prediction character. They can be further classified according to applied mathematical or statistical methodologies into discriminant analysis models, e.g. *Altman Z-scores*, *IN models*, *Tafler-Tisshawa model*, *Fulmer model*, *Springate model* etc. and regression analysis models (logit, probit models), e.g. *Ohlson model*, *Zmijewski model*, *Zavgrenev model*, *J-T model*, *Sharita model* etc. Except different mathematical or statistical methodologies that have been applied, models differ also by conditions (in the meaning of economic) in which they have been created, by final constructions, and ability to predict a debtor's creditworthiness. It is important to note that if analytic methods are applied, it is necessary to take into account particular characteristics of selected indicators due to industry specialization of a business partner and differences in accounting standards and practise across countries, which may colour final picture about a financial situation of a partner.

*External rating models* provide a measure of a relative creditworthiness of any entity (company, financial institution, state or securities), taking into account a wide range of factors. In case of corporate rating, usually are considered: chosen financial ratios, financial results, macroeconomic factors, level of development of an industry sector, where a company does business in, competitive position in the market, management quality etc. [7, 8]. The credit quality of a company is usually categorized into a pool of case that are considered to have the same degree of creditworthiness and usually they have the character of letter ratings. Credit ratings of some companies are publicly available and so may be directly applied in a risk assessment in a given export transaction. In case that the rating of importer is not available, the exporter may ask to rate a partner at a commercial base (e.g. the Slovak exporters they may ask to prepare a rating e.g. Export-Import bank of Slovak Republic, factoring/forfeiting institutions, and already mentioned international information agencies).

*Market-based methods (structural methods)*, e.g. *Merton model*, *Black-Cox model*, *Geske model*, *KMV model* etc. generally use information derived from financial market prices to determine credit quality [9]. Models use specific information from the financial markets to model probability of default [4] and together with *transition methods* are considered as the most advanced approaches to the credit risk measuring. Given methods may be also applied in the assessment of credit risk in export transactions, too. The default occurs exactly when debtor's assets market value is lower than liabilities' book value. Because the market data are incorporated, models are more responsive to the changing conditions [7]. Since models depend on market indicators, are not applicable in all cases. Further problems are also that models are more or less "*insufficient to generate meaningful default profanities or spreads, and that the models suffer from incomplete causality*" [10] and that "*they assume exact information on the moment when the borrower fails to meet own commitments (when default occurs), because the default is an unexpected event in the "life" of debtor*" [7]. *Transition methods* in general allow investors to calculate economic losses on a financial portfolio basis measuring the overall market risk and in comparison to structural models they are intended to use in analysing and managing credit risk of a total investment portfolio. In case of export transactions these methods are applicable if the exporter tries to identify and measure expected losses over a given time period at the defined tolerance level in case of at least two business export transactions (or in case of two business partners). In a process of risk assessment many VaR methods, which differ in the way of simulation of changes of risk factors and in the way of transformation these changes into changes of investment portfolio [7, 11] – in export transactions it means into changes of expected CFs from assumed transactions.

The exporter may build up own credit rating system as a part of *expert system* to measuring credit risk in export transactions. Its functionality highly depends on a quality of input information and on functionality of overall EIS. The expert system may incorporate all important findings from previous methods, starting with basic financial statement analysis, ending with findings from applying modern methods of credit risk measuring. *Brown and Moles* emphasize that such models "*have been built up over time based on individuals' and organisations' collective experience of the*

credit process and are reflected in a set of operating procedures” [4]. In contrast to the external ratings, the assessment of creditworthiness may have aspects of subjective evaluation.

*Behaviour models* observe behaviour of a partner particularly as regards fulfilment of payment conditions over time to derive appropriate relationships for reaching a decision. They are suitable for application if it is a regular business partner and the exporter has information about its previous payment discipline. It can be an effective complement to the previous methods of credit risk measuring.

### 2.3 Determining payment conditions and assurance instruments based on the creditworthiness of foreign business partners

At present granting a business credit is a necessary condition if company wants to remain competitive and therefore an absolute refusal to sell on credit may mean a loss of business opportunities. Following the modern finance theory, a refusal credit is not necessarily the appropriate response to a poor partner’s credit quality, but the required return and payment conditions should be adjusted for the risk taken in a given export transaction. *“If the risk has been correctly estimated, then, companies over the medium term and where portfolio diversification effects apply, losses will be compensated by gains elsewhere. The decision can then be made as whether to provide a credit line at an appropriate risk-adjusted price to compensate for the risk or to find ways to reduce the degree of exposure but still enter into the transaction [4].”* Basic option for credit risk reducing is adequate setting of payment conditions – the higher the counterparty risk is, the more precisely payment terms should be applied. If a business partner fails to pay obligation and if in a contract was agreed only unbinding payment conditions, the chance of debt’s recovering depends on whether it was or was not commercially insured against obligor’s payment delinquency or default and on a level of legal law enforcement. In the *Fig.1.* are depicted basic payment conditions applied in the foreign trade depending on a level of exposure of exporter to the default risk of business partner including an identification of position of bank or insurance company in a given payment condition. In connection with credit risk in export transactions, it is important to note, that also other tools can be applied (that help to reduce not only this kind of risk) depending on the stress factor of trade transaction. Mostly are used: a diversification (mainly geographical diversification, diversification of sales to several business partners in the same foreign market), contractually agreed arrangements (mainly on ensuring receivables, barter trade agreement), commercial insurance of trade credit, leveraging a market power of the exporter, and self-insurance in the form of creation of reserves to cover potential losses from export transactions.


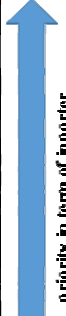
	Applied payment conditions	Role of a bank/insurance company	
 <p>priority in terms of exporter</p>	Advance payment	T I, provide an advance payment bank guarantee by exporter’s bank to the importer	 <p>priority in terms of importer</p>
	Sight L C, Deferred payment L C	opening a L C, advising a L C, payment to the exporter after submissions of required documents	
	Documentary collection (documentary payment)	sending collection documents, payment to the exporter after checking of documents	
	Documentary collection (documentary acceptance)	sending collection documents, accepting a bill of exchange issued in a favour exporter or its bank after checking of documents (accept a bill of exchange)	
	Payment after delivery (trade credit)	T I, provide payment bank guarantee to the exporter, accounts receivable insurance, purchase of receivables	

Fig.1.Chosen payment conditions in export transactions accepting the priority in term of exporter and importer.

Note: self-processing.



### 3. Summary

Credit risk that simple represents a possibility of obligor's payment delinquency or default, is also presented in export transactions. The proportion of its presence in domestic and foreign transactions varies and generally, international trade and financial transactions are considered to be more risky than domestic ones. Despite this fact the participation in the foreign trade and investments is almost existential for companies nowadays due to constantly ongoing process of globalization. It is also crucial for the national economy, too – it constitutes revenues to the state budget, increases household incomes, creates significant savings, investments, job opportunities, supports development of infrastructure, transfer of technologies and knowledge, economic growth and employment. It is also a source of foreign exchange, positively impacts on the national balance of payments, and the inner and outer economic balance. It follows that risk management in the foreign trade should play an important role in business and financial relationships. In many cases an assistance of the state represented by the government and specialized state institutions is desirable.

The credit risk management in export transactions is mainly related to the exporter's decision if to provide a trade credit to a foreign business partner and under which conditions that primary depends on a partner's creditworthiness. There are many approaches to measuring of credit risk and evaluation of creditworthiness. Selecting a particular method depends on several criteria, particular on the availability and quality of information, financial transaction value, previous exporter's experience, quality and availability of information technology, possibility to use assistance of specialized institutions etc. Based on the determination of creditworthiness of a business partner, in turn it will be determined a limit for trade credit, payment conditions and assurance tools, that can be applied in a given export transaction.

### 4. Acknowledgement

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## Comparison of the Selected Bankruptcy Models

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**Keywords:** Predictive methods; Bankruptcy models; Univariate analysis; Multivariate analysis; Enterprises.

**Abstract.** Enterprises, during their lifetime, are getting to the various crisis situations, which if are not addressed could pose a threat to the viability of the enterprise and ultimately may lead to cessation of enterprises. The end of the enterprise affects the economy of the country, causing the growth of social and political problems that are associated with an increase in costs. Due to this fact, all the interested parties coming from the ambience of the interest not only of the development of the company in the past and its position in a competitive environment, but their interest and future-oriented, i.e. the likely development of the company in the coming years. They try to answer the question whether the analysed company in the future will not be a loss, respectively or even as a result of negative economic results there will be no end to his activities. This paper is focused on the bankruptcy prediction models.

### 1. Introduction

Rather than we access to specific model, it is advisable to define exactly what the Bankruptcy models are. Their importance felt by lenders mainly because using them lenders are able to determine the financial performance of the company, or to predict whether the company is in in a state of insolvency or in a state of solvency [1].

The bankruptcy models have the synthetic nature, because they are the combination of several business ratios, which are assigned weights and the weighted sum gives the score by which it is concluded if the enterprise is vulnerable to financial distress or bankruptcy [2]. However, models which consist purely on ratio indicators are rather history. At present, ratio indicators are complemented by other variables, based on market characteristics, macroeconomic data or specific values that describe detailed features of the enterprise. These approaches can be found in paper work of Sobehart and Stein (2000), Shumway (2001), Hillegeist et al. (2004) or Bharath and Shumway (2008).

In terms of approach to creating the bankruptcy models, there are two basic types (i) univariate and (ii) multivariate models [2].

### 2. The univariate analysis

Before the 1960s enterprise solvency used to be assessed using univariate statistical methods. The first pioneers of bankruptcy models were analyzes based on a separate assessment of individual ratio indicators, so-called univariate or one-dimensional analysis. The indicators were developed in the

financial statements and evaluated separately and compared between enterprises in bankruptcy and prosperous enterprises.

Univariate analysis had a significant impact on the future development of prediction models, because they showed that there is a link between the accounting records of the past and the future direction of the enterprise. Thus, the univariate analysis laid the foundations for the creation of more complex methods. In the time period between 1930 and 1966 it was made up relatively few models compared with the following decades. In this decade are the best known (i) FitzPatrick (1932) and (ii) Beaver (1964) model [3].

### **2.1 FitzPatrick**

First formally recognized research dealing with analysis of the enterprise's bankruptcy was the work of Paul J. FitzPatrick, published in 1932. FitzPatrick compared 13 ratio indicators in the enterprises which gone bankrupt and successful enterprises. Both groups included 20 observations of 16 industrial areas. The enterprises were paired according to the type of activity which carried out. The result show that the successful enterprises achieve favorable results by the evaluation of the indicators, in contrast to the enterprises which gone bankrupt, their results were unfavorable. It can be say that this is the first study showed that it makes sense to examine the financial information for forecasts the decline [3].

### **2.2 Beaver**

Beaver analysis is considered as the best known one-dimensional model. Beaver, in his work, confirmed the results of his predecessors and found a relationship between the values of ratio indicators and the risk that the enterprise goes bankrupt. To construct this model were selected 79 problematic and 79 unproblematic enterprises with 30 ratio indicators, of which 6 achieved a statistically significant effect in terms of prosperous and unprosperous enterprises [4].

## **3. The multivariate discriminant analysis**

Multivariate discriminant analysis has been applied in bankruptcy prediction since the end of the 1960s. After that were the options of one-dimensional predictive analysis exhausted, the multivariate analysis was given to the range.

The first used method was the multivariate discriminant analysis. As already its name suggests, discriminant analysis distinguished the studied enterprises and divided them into groups (healthy or gone bankrupt) on the basis of observed variables (ratio indicators). For the classification of enterprises into the groups, discriminant analysis looking for rule by which the sorting take place [5]. Rule and the subsequent decision to list the enterprise to just one group must be designed to eliminate to inclusion the enterprise to the wrong group. This rules is specified by training data with a known affiliation to the single group and then verifies the unknown group. In this group these models are the best known:

### **3.1 Altman model**

Probably the best known publicly published model, which is addressed the use of multivariate methods was published by prof. Edward Altman in 1968. By applying the multivariate discriminant analysis on financial data of 66 enterprises which were divide into two groups, he had selected from the 22 original variable the final 5, which together were able to best predict future bankruptcy. They were these 5 variables:

$X_1$ = Working Capital / Total Assets. Measures liquid assets in relation to the size of the company.

$X_2$ = Retained Earnings / Total Assets. Measures profitability that reflects the enterprise's age and earning power.

$X_3$ = Earnings before Interest and Taxes / Total Assets. Measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

$X_4$  = Market Value of Equity / Book Value of Total Liabilities. Adds market dimension that can show up security price fluctuation as a possible red flag.

$X_5$  = Sales / Total Assets. Standard measure for total asset turnover [6].

Altman also examined how to contribute significantly different characteristics to the overall strength of the model. He found that the greatest benefit is EBIT to Total Assets and the smallest indicator has Working Capital to Total Assets. After performing other statistical calculations were determined by weighing the variables and was thus resulting equation model. Specifically, the values of coefficients were more similar because Altman model updates. We are presenting the equation of 1983, which was replaced by the market value of equity in the numerator of the carrying value  $X_4$ , to be able to use the model for companies that are not publicly traded, which is in the Slovak Republic more realistic situation. The resulting equation should have the following form:

$$Z_{1983} = 0,717X_1 + 0,847X_2 + 3,107X_3 + 0,42X_4 + 0,998X_5 \quad (1)$$

In the above equation (1) variables remain unchanged, only changing their weight and also conditions of class which in this case:

$Z \geq 2,9$  we can predict a satisfactory financial situation.

$1,23 \leq Z \leq 2,9$  "grey zone" of ambivalent results.

$Z \leq 1,23$  enterprise is threatened by serious financial problems.

### 3.2 Taffler bankruptcy model

Taffler bankruptcy model was first published in 1977. Its author, R. J. Taffler developed a linear model with five ratio indicators that has been improved and modified. The author emphasized that it is important to compare the enterprises within the same industry, and recommend them to move on the achieved values into percentile groups. He tried to interpret not only the value of the integral indicator, as well as developments which would enable precisely predict the future direction of the business entity. Taffler bankruptcy model works with the following four indicators [6]:

$$TBM = 0.53 * 0.13X_1 + X_2 + X_3 + 0.18 * 0.16X_4 \quad (2)$$

$X_1$  = EBT / current liabilities

$X_2$  = current assets / total liabilities

$X_3$  = current liabilities / assets

$X_4$  = sales / assets.

Enterprises, which give a value greater than 0,3 are classified into groups with low probability of bankruptcy (regarded as the creditworthy). High risk of bankruptcy (in this case is regarded as the bankrupt) it is typical for enterprises which give a value of less than 0,2.

### 3.3 Springate model

Another prediction model developed in the research project, Simon Fraser University, Canada, G. L. V. Spring. His model is based on the principle of integral Altman model, and the model was tested on a sample of 40 enterprises. Of the nineteen originally ratio indicators were selected only 4 indicators by using discriminant analysis. [7]

$$S = 1.03 * 3.07X_1 + X_2 + X_3 + 0.66 * 0.4X_4 \quad (3)$$

$X_1$  = net working capital / assets

$X_2$  = profit before tax / property

$X_3$  = EBT / current liabilities

$X_4$  = sales / assets.

In Springate model there is the separation limit of 0,862. If the enterprise reaches a value of less than 0,862, we can be assessed as "failed", i.e. the enterprise is expected to problems.

#### 4. Models from the Visegrad Group

When applying the method of prediction it must be borne in mind that the methods are constructed in a different environment and are based on the data from the specific financial, legislative and information environment. The environment by its parameters significantly different from the environment in which businesses operate from the Visegrad Four. In these countries, faced with a modified method of financial analysis rash which is which it is caused by the fact that the economy of the country has undergone significant transition. Based on this fact, we are the third category prediction methods included Poznański model (Poland) model and Hajda Virag (Hungary) and Index IN05 (Czech Republic). [8]

##### 4.1 Index IN05

Index IN05 is a treatment Altman analysis for the conditions of the Czech Republic, and the authors of this index are Neumaier and Neumaierová. The basic advantages of the Index IN05 is that this model have a clearly defined algorithms quantification of the use of indicators, a simple calculation, gives unambiguous results, working with publicly available financial data of the enterprise, can be used not only for the enterprises in the capital market, but also for other enterprises and is a suitable complement a parallel system of indicators of financial and economic performance [8]. IN05 index consists of five ratio indicators and has the following form:

$$IN05 = 0.13 * 0.04X_1 + X_2 + X_3 + 3.97 * 0.21 * 0.09X_4 + X_5 \quad (4)$$

$X_1$  = total capital / borrowed capital.

$X_2$  = EBIT / interest expense,

$X_3$  = EBIT / total capital.

$X_4$  = Total revenues / total capital.

$X_5$  = current assets / current liabilities broadly

Enterprise with an index value greater than 1,6 is predicted excellent financial health, the enterprise with a value below 0,9 is heading to bankruptcy, and the enterprise with a value between 0,9 and 1,6 is in the grey zone.

##### 4.2 Model Poznański

Poznański model is one of the most predictive model that was designed for conditions of Polish businesses. The design model is based on four financial indicators, and its effectiveness has been at 92.98%. Poznański model has the following form [8]:

$$FD = 3,562 * 1,588X_1 + X_2 + X_3 + 4,288 * 6,719X_4 - 2,368 \quad (5)$$

$X_1$  = net profit / assets

$X_2$  = (current assets-inventory) / current liabilities

$X_3$  = permanent assets / total assets

$X_4$  = profit from sales / revenues from sales.

The resulting value is less than 0 says that the company threatens poor financial situation in the future. If the company reaches a value greater than 0, can in future expect a favourable financial situation.

##### 4.3 Model Virag and Hajda

Adjusted predictive models for Hungarian enterprises have a long tradition in Hungary. First of bankruptcy models created Miklos Virag and Otto Hajdu was based on accounting for the data of Hungarian enterprises from 1990 and 1991. In the sample were included 154 enterprises, of which 77 going concerns and 77 businesses have gone bankrupt. To create this model, the authors used 17 input ratios, and the resulting equation contains 4 financial indicators [9].

$$Z = 1.3566 + 1.63397X_1 * X_2 * X_3 + 3.66384 + 0.03366X_4 \quad (6)$$

$X_1$  = immediate liquidity,  
 $X_2$  = cash flow / debt  
 $X_3$  = current assets / total assets,  
 $X_4$  = cash flow / total assets.

Partition is in this model value 2, 61612. Enterprises with a higher value than 2, 61612 classified as solvent, the lower value refers to the risk of bankruptcy.

## 5. Conclusion

One of the consequences of the current situation is the failure of businesses. On this place brings out the importance of prediction methods, which can in addition identifying the critical aspects that could threaten the enterprise's survival in the future, and classify enterprises with only one mark. This is their major strength, as the financial manager gives a comprehensive view of the financial position of the enterprise. Similarly, ex-ante financial analysis eliminate the disadvantages of the methods of financial analysis ex-post. On the other hand, the current situation in the business environment highlights the fact that the application of prediction methods of ex-ante financial analysis evaluation is a very sensitive matter, in which a financial manager must take into account a number of different internal and external factors. The aim of the present paper was to compare the selected prediction method, univariate, multivariate and also the models used in V4.

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## Evaluation of Prediction Ability of Bankruptcy Prediction Models Applying Logistic Regression (LOGIT)

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**Keywords:** Bankruptcy prediction models; LOGIT analysis; Probability of default

**Abstract.** There are many prediction models widely known nowadays differing in reliability i.e. ability to predict, variables involved, sector preferences, conditions on national markets (to what extent the conditions are taken into account) etc. The dynamic business environment together with sector specific conditions make room for emerging new prediction models. The paper deals with the bankruptcy prediction models pointing out at the predictive ability of them, which is considered to be one of the essential quality and model reliability criteria. The terms of bankruptcy is further determined together with identifying the individual forms of bankruptcy prediction models assigned to one of the three defined groups. Furthermore, the scale of variables being involved but varying in intensity once applied is addressed. The overall predictive ability of bankruptcy models is also rather diverse what shows the results of a survey carried out to identify the dependence between a number of variables involved and the predictive ability of model using the Pearson correlation coefficient (the survey covered 20 random bankruptcy models, which have been applied in various countries worldwide, belonging to a category of logistic regression (LOGIT). Given that the calculations proved there is a non linear correlation between a number of variables involved and predictive ability of a model, the quality of model is therefore impossible to be tracked in terms of the number of variables involved.

### 1. Introduction

The decisive qualitative attribute of prediction models is the ability to classify entity with sufficient reliability into the category of prosperous (solvent) or non-prosperous (insolvent) entities. The level of predictive ability level varies upon the existing models, logically, the value declines with the period of time for which the prediction is executed. Input data for models are data taken from entity's Statement of Finances.

Bankruptcy is defined as financial insolvency or legal proceedings for solving financial commitments of an insolvent debtor (being person or entity). The purpose of bankruptcy proceedings is to distribute assets to creditors in a fair way and (in majority of cases) release the debtor from further financial commitments. Bankruptcy may be declared by debtor alone (voluntary bankruptcy) or by creditors (involuntary bankruptcy), [1].

### 2. Classification of bankruptcy prediction models

There are various prediction models, differing in approaches and methods applied for their compilation, demand for input data, number of variables, form of interpretation of results, etc. The existence of large number of models is caused by the fact that there is not universal application in various sectors and economic conditions. It is understandable that creators of prediction models strive to create a model

that is able to provide a required value of prediction capability within the longest possible period of time, however, it is very difficult in the environment of ever-changing market conditions.

The modern age of entity financial health prediction goes back to 1960s of the previous century. Then, Tamari, M., Beaver (1966), V. H., Altmann, E. J. (1968), considered as founders of scientific forecasting of entity financial health, published their studies regarding early warning systems. Since then, there have been hundreds of prediction models created

By studying and analyzing of information sources including bankruptcy prediction models, we established three groups integrating models based on approaches used for their construction:

A) Statistical prediction models

- UDA - univariate discriminant analysis (linear)
- TDDA - two-dimensional linear discriminant analysis (linear)
- MDA - multivariate discriminate analysis (linear)
- QDA - quadratic discriminant analysis
- PCA - principal component analysis
- LOGIT - logistic regression
- PROBIT - probit regression
- LP - linear programming
- DEA - data envelopment analysis
- SA - survival analysis
- FT - fuzzy techniques
- CUSUM - cumulative sums
- PAP - partial adjustment processes

B) AIES models (Artificially Intelligent Expert System Models)

- RPDT - recursively partitioned decision trees
- CBR - case-based reasoning
- GA - genetic algorithms
- NN - neural network
- RS - rough sets

C) Theoretical models

- BSDM - balance sheet decomposition measures
- GRT - gambler's ruin theory
- CMT - cash management theory
- CRT - credit risk theories

### 3. LOGIT model

They are the models based on a principle of logistic regression (LOGIT) that make one of the largest group of statistical prediction models, and hence widely used because of the relatively high predictive validity of them. Moreover, the LOGIT models compared to the models using multivariate discriminate analysis (MDA), that are considered the basic methods for predicting financial soundness of business entity, take the business environment's real conditions into account to a greater extent.

Logistic regression eliminates disadvantages of discriminant analysis – does not assume normal distribution of independent variables and homogeneity of variation-covariance matrices [2].

Logistic regression is standard mathematical-statistic method for decades. It is applied almost in cases that explaining, dependent variable is not is not continuous but binary – dichotomous or alternative (if the explaining variable is continuous we use classical linear regression), so it means it can take only two values. Variable  $y$  that we try to explain using ratio (explanatory variables), it takes discrete value. If the company prospers it is the value  $1$  and if the company declared bankrupt it is the value  $0$ . For this reason, we cannot use “classic” regression but adjusted regression analysis, called LOGIT and PROBIT models [3].

We meet with different types of classification variables:

1) *Nominal variable* – value either belongs or does not belong into certain category and we do not know determine the order of these categories (expressed by words or numerical codes).

2) *Ordinal variable* - meet all conditions that are required from nominal variable and in addition we can determine the order of its values.

3) *Interval variable* - allows to find out not only the order but also quantifies difference between of its two values

4) *Ratios variable* - have defined “rational zero” and therefore it make sense to talk about how many times is one value higher (lower) than the other.

The aim of logistic regression (it is similar to the linear regression) is expressed dependence of magnitude Y on the variable  $x_k$ . It does not use a linear dependence. Observed data are interleaved by logistic curve instead of line and its prescript is [4].

$$\Pi = \frac{e^{\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k}}{1 + e^{\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k}} \quad (1)$$

$$\Pi = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)}} \quad (2)$$

By mathematical manipulations:

$$\ln \frac{\Pi}{1 - \Pi} = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \quad (3)$$

Where:

- $\Pi$  - probability of default
- $x_k$  - the value of k-th financial indicator,
- $\beta_k$  - coefficients of individual indicators

Variables of this logistic function  $x_k$  are chosen financial indicators while coefficients  $\beta_k$  is necessary to estimate – these coefficients are estimated by using of the method maximal likelihood. In this case it cannot to stated that these coefficients are weights of individual financial indicators and their finally interpretation is then more complicated than the linear models. For determine the probability of default it is not necessary to use calibration of model, it is sufficient to calculate median of known probabilities of all subjects (observed companies) which are in individual group. Logistic function may be increasing and also decreasing but its value is always between zero and one [5].

Assume that:

$$z = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \quad (4)$$

The following function, which is dependent on z, is referred to as logistic regression:

$$f(z) = \frac{1}{1 + e^{-z}} \quad (5)$$

Where  $f(z) \in (0,1)$  represents the probability of an event. Typically, the cutoff value is 0.5. Logistic regression is useful for describing the relationship between financial variables and the probability of corporate failure [6].

### 3.1 Prediction ability

Our survey also focused to monitoring the level of application of particular models. Altogether, there were over 800 prediction models gathered and analyzed. The first group of models - Statistical Prediction Models - are the most applied models. It is a scheme of several ratio-type indicators with assignment of corresponding significance. The summary of compiled function represents score which serves as a base for decision-making whether the particular entity is susceptible to bankruptcy.

Our primary goal is to save prediction ability of LOGIT category models in relation to number of variables that represent structure of such models.

Out of the group of over 800 prediction models surveyed, we used random selection to create a group of 20 LOGIT category models (see Table 1). Random selection was not determined by any criterion related to origin of such model, its author, year of creation, sector of its preferential application, etc. Obviously, these models vary according to their composition regarding the number of variables used and tested prediction ability.

Tab.1.Overview of evaluated LOGIT prediction models

#	Author	Year	Sector	Number of variables	Predictive ability [%]			
					Healthy companies (Non-bankrupt firms)		Failing companies (Bankrupt firms)	
					from	to	from	to
1.	Agarwal	1993	general	5	56,5	86,5	40	80
2.	Alici	1996	manufacturing	4	66,79	66,79	65,27	65,27
3.	Arkarajedachachai	1993	manufacturing	4	77	77	69	69
4.	Azziz and Lawson	1989	general	10	70,2	79,1	53,9	92,3
5.	Boritz and Kennedy	1995	general	14	83,9	83,9	75,26	75,26
6.	Casey and Bartczak	1985	general	9	95	98	13	63
7.	Dambolena and Shulman	1988	general	14	68	86	84	98
8.	El-Temtamy	1995	oil and gas	11	68,87	96,23	69,64	94,64
9.	Gentry, Newbold and Whitford	1985	general	8	73,9	69,6	69,6	78,2
10.	Hopwood, McKeown and Mutchler	1989	general	7	87,5	100	3,1	62,5
11.	Luoma and Laitinen	1991	manufacturing	3	70,6	70,6	73,5	73,5
12.	Martin	1977	banks	4	91,1	91,1	91,3	91,3
13.	Platt and Pantalone	1987	banks	5	83,4	83,4	86,7	86,7
14.	Platt, Platt and Pedersen	1994	oil and gas	6	91	96	80	94
15.	Suominen	1988	manufacturing	3	85	86	67	71
16.	Tam	1991	banks	9	91	100	64	70
17.	Theodossiou	1991	manufacturing	8	92,6	92,6	95,5	95,5
18.	Wang	2004	internet	8	90,8	90,8	26,7	26,7
19.	Wertheim and Lynn	1993	hospitals	6	63,3	76,1	64,7	78,3
20.	Zhang, Hu, Patuwo and Indro	1999	manufacturing	6	78	81	74	79

Source: own processing

The analysis of random selection model samples included calculation of the following statistical indicators:

- Number of variables median: 6.5 variables
- Average number of variables: 7.2 variables
- Average prediction ability in %: healthy companies – from 79.2 to 85.5, failing companies – from 63.3 – 77.2.

Consequently, we evaluated relation of models between their prediction ability and number of variables used included into their structure by using Pearson correlation coefficient:

$$r_{XY} = \frac{n \cdot \sum_{i=1}^n x_i \cdot y_i - \sum_{i=1}^n x_i \cdot \sum_{i=1}^n y_i}{\sqrt{n \cdot \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2} \cdot \sqrt{n \cdot \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}} \quad (6)$$

$$r_{XY1} = 0.0319 ; \quad r_{XY2} = 0.3075 ; \quad r_{XY3} = -0.0410 ; \quad r_{XY4} = 0.1819$$

Where:

$r_{xy1}$  - value of Pearson correlation coefficient, lower value of predictive ability for non-bankrupt firms

$r_{xy2}$  - value of Pearson correlation coefficient, top value of predictive ability for non-bankrupt firms

$r_{xy3}$  - value of Pearson correlation coefficient, lower value of predictive ability for bankrupt firms

$r_{xy4}$  - value of Pearson correlation coefficient, top value of predictive ability for bankrupt firms

#### 4. Summary

In two cases ( $r_{xy1}$ ,  $r_{xy3}$ ) the value of Pearson correlation coefficient calculated is close to zero which means that it is not possible to linearly correlate number of factors of the model and its prediction reliability in relation to bankruptcy prediction. The values  $r_{xy2} = 0.3075$  and  $r_{xy4} = 0.1819$  suggest a very poor linear response given the number of variables of a sample of bankruptcy LOGIT models involved to their predictive validity.

Therefore we can definitely confirm that the model prediction accuracy is not determined by the number of variables included. In many cases, models with lower number of factors are more reliable than models including higher number of factors. Therefore, the model prediction accuracy predominantly depends on the correct selection of variables used. The level of predictive ability depends to a large extent on a number of variables and factors involved, which are supposed to get considered in advance.

The following are considered the most widely used bankruptcy prediction model variables: net income to total assets, current ratio, working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets etc. [7].

We evaluated the level of causal dependence of model prediction ability from number of variables used by applying determination coefficient, which is defined as second power of correlation coefficient  $r$ . Interpretation of determination coefficient  $r^2$  is based on dispersion analysis of model prediction ability, which should be interpreted by the value of variability of number of variables to the extent providing linear dependency of prediction ability of models. In our case, the determination coefficient values are  $r^2_{xy1} = 0.0010$ ,  $r^2_{xy2} = 0.0946$ ,  $r^2_{xy3} = 0.0017$ ,  $r^2_{xy4} = 0.0331$ , i.e. only 0.10 %, 9.46 %, 0.17% and 3.31% of bankruptcy model prediction ability variability may be interpreted by linear relation with number of included variables (regression line). As much as 99.9 %, 90.54 %, 99.83 % and 96.69 % of bankruptcy model prediction ability variability may be interpreted by other causes such as linear dependence between number of used variables and prediction ability.

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**Chapter 2:**  
**Culture, Art and Sports**





## The Structure of *War and Peace*

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**Keywords:** *War and Peace*; Tolstoy; Structure; Composition

**Abstract.** This article dwells on the complex and new artistic structure of Tolstoy's masterpiece *War and Peace*. It maintains that the structure is one of the most crucial features in Tolstoy's works, which generates far-reaching significance, contributes immensely to the success of the novel and helps the reader to better understand the variety and richness of life.

To a great extent, the success of *War and Peace* should be owed to Tolstoy's peculiar artistic techniques. The complex and new artistic structure is one of the most crucial features, which generates far-reaching significance and contributes to the success of the novel. Plot is the main element in literature. Structure decides the plot, and "creating a plot is not a mere mechanical process. It is through plot that the author organizes the raw material of experience and expresses the meaning of a work of fiction" [1]. Thereupon, structure is crucial in *War and Peace*.

### 1. Juxtaposition and integration of opposites

Though it is a big novel written over a long period of time, *War and Peace* has a relatively new architecture that makes the novel seem harmonious. "One of the distinct features of *War and Peace* is its grand structure" [2]. The principle of composition is to people and phenomena in terms of their opposites and then to contrive the juxtaposition and interaction of these opposites. There exists a series of sharp contrasts between two dissimilar groups –family and social – which, as groups, each reveals a corporate uniformity. Within these contrasted groups, there are individuality and variety. But ultimately the individual, however many-sided his personality may be, remains basically true to his group and does not transfer his allegiance to the other side. The flow of the novel is maintained by this constant juxtaposition of contrasting groups, the individual members of which are in continual conduct as they move to and fro and mix with each other. But group solidarity triumphs; the individual is only free within the limits of the group.

The basic contrast in *War and Peace* is the one inherent in the title. This is not simple a contrast between the periods when the country is at a war and the periods when it is not. War means military actions; peace means non-military actions whether in peacetime or in war. There is a balance held in the composition of the book between military and non-military scenes, even toward the end, when a state of war is permanent. Even then, the presence of Pierre, the civilian, the spiritual seeker, towers above that of the soldiers and the prisoners among whom he finds himself. Although Pierre and Karataev are both prisoners-of-war, Readers do not regard the periods in which they appear as belonging to the "war" side of *War and Peace*.

## 2. Contrast of groups and scenes

In the early parts of the novel the principle of juxtaposing and contrasting peace and war scenes is very obvious. Volume I is divided into three parts. The first is exclusively peace; the second is war; the third begins with peace and ends with war. Volume II covers the biggest span of years (1806-1812), and except for some brief chapters in the second part it is all peace. Volume III and IV describe a continuous period of war. But the threads of “war” and “peace” are no longer separate and parallel. They are very closely interwoven. All the country is involved in war because the struggle is no longer outside Russia, but on her own soil. “Peace” now means domestic interludes, salons and soirees in the wartime, civilians serving in the army, and Natasha caring for the wounded. The change in composition from the early juxtaposition of military and non-military scenes to their later integration reflects the changes in the nature of the war. When an army fights abroad, war and peace are divisible; but when it fights at home, they are not.

There is a clearly discernible pattern running through all the volumes of the novel that invariably begin and end with significant scene or event in peace or in war. The two basic states of existence—peace and war provide Tolstoy with useful outer framework for his novel.

Within this framework the two states are inwardly contrasted. One is tempted to think the Tolstoy, with his love of contrast, wanted to draw a dividing line between the “good” war and the “bad” war. Since the French are the aggressors, while the Russians are their victims, and the French leader is made to appear ludicrous while the Russian commander is the symbol of wisdom, it might seem at first sight that Tolstoy is opposing the just to the unjust cause. The antithesis, however, is not as simple as that. Tolstoy never evinces that all right is on the side of the Russian, all-wrong on the side of the French. For Tolstoy, war is an unmitigated evil. Generals and professional soldiers, diplomats, Statesman and emperors – so far as they believe that they are planning and directing war in accordance with their own wills –are equally unsympathetic to Tolstoy. The ordinary man, who finds himself a soldier, is no worse for being French than for being Russian. Structurally speaking, the arrangement of the war materials in *War and Peace* follows the line not of the a just materials in War and Peace follows the line not of a just and unjust cause, but of “good” men and “bad” men. “Good” in the military context means unpretentious, and spontaneous non –conformist; “bad” in the same context means arrogant, self-opinionated, disingenuous, hidebound and lustful for power.

Similarly, at the basis of the construction of the peace scenes in the novel is the contrast between “good” families and “bad” ones. The Bolkonskys and the Rostovs are patriotic and devoted to their country and to its finest national traditions. To the Kuragins and the DrubetsRoys, on the other hand, Russian is not as dear as their own private pleasure or their own personal ambition. The former are never wholly wrapped up in themselves. They are capable of giving as well as receiving. The latter are self-centered.

Within the “good” families of the Russian aristocracy, there is a further sharp division between the earnest, intelligent Bolkonskys and the gay, impulsive, somewhat scattered-brained Rostovs, a contrast of thoughts and feelings. Pierre moves between the two families, attached by friendship to Andrew Bolkonsky and eventually by marriage to Natasha Rostova, and linked by his first marriage with the unnatural, sensual Kuragins. He is the keystone of the arch in the building of *War and Peace*.

So far, in speaking of big homogenous but contrasting groups, we have been talking in terms of virtual absolutes and constants. The Bolkonskys and Rostovs, as families, are good; the Kuragins are bad. Simple soldiers are good; the military caste is bad. If we have the gradations, then the variety, the growth and development is in the individual characters within the groups, and in their vicissitudes, their changes of opinions, their seeking and their finding, their progress towards maturity. Prince Andrew is a very different man in 1812 from what he was in 1805. But even in 1805, he was a Bolkonskys not a Kuragins. He always belongs to “us” and not to “them”. Similarly Natasha, stripped of her vivacity and brought to a somewhat somber motherhood, remains a Rostov –simple, natural, direct, untroubled by serious thoughts. However great the apparent change in character, it is not big enough to place men and women outside the group to which they

belong and will ever belong. Contrast between groups, change and development of individuals within those groups –these are the constants and variables in Tolstoy’s method of composition.

The constructional device of antithesis so favored by Tolstoy, may be seen to operate not only in contrasting groups, but also in contrasting scenes that directly succeed one another. Nicholas in raptures over Natasha’s singing gives way to Nicholas in despair as he confronts his father with the news of his gambling debts [3]. The carefree scene of Natasha dancing at uncle’s house is followed in the next chapter by a reminder of all the cares and troubles of the Rostov household [4]. The gaiety in the dying count Bezukhov has his sixth stroke. The blow that nearly kills Countess Rostov restores Natasha to life [6]. These and many similar examples in *War and Peace* call to mind the already mentioned juxtapositions such as Nicholas’s death and Kitty’s pregnancy in *Anna Karenina* or the transitions in the same novel from darkness to light and from light to darkness. They are characteristically Tolstoyan.

### 3. Constant repetition of situations

Another device that Tolstoy uses to sustain the flow and movement of the narrative is the constant repetition of identical or closely related situations and thoughts that establish links. They cast the mind back momentarily, and provide the cohesion vital for a work of this length. We have in mind not the recurring physical and spiritual characteristics of the main heroes, but the repetition of situations or phenomena, echoes and vibrations of what has gone before, which constitutes “situation rhyme”. In spring of 1809 on his way to Ryazan estates and shortly before his first meeting with Natasha, Prince Andrew crosses the same ferry he has crossed with Pierre. As he lies wounded in a tent after Borodino battle, he recollects another scene which takes us back in time: “All he saw about him merged into a general impression of naked bleeding human bodies that seemed to fill the whole of the low tent, as a few weeks previously, on that hot August day, such bodies had filled the dirty pond beside the Smolensk road. Yes, it was the same flesh, the same chair a canon, the sight of which had even then filled him with horror as if by a presentiment” [8].

Not only do situations rhyme: thoughts reverberate and echo in the same way. Prince Andrew’s thoughts on the unimportance of everything he understands and the importance of incomprehensible something “the Great All or Nothing”, which he gives expression to when wounded after Austerlitz, are recalled during the scene with Pierre on the raft when “for the first time since Austerlitz he saw that high everlasting sky he had seen when lying on the battlefield” [9]. Again Pierre’s thoughts on the meaning of life recur throughout the novel in similar forms and sometimes even in identical images and words. Take, for example, the tormenting question “what is right and what is wrong?” As Pierre ponders over his action in fighting a duel with Dolokhov and the desirability of separating from his wife, he thinks “Louis XVI was executed because they said he was dishonorable and a criminal, and from their point of view, they were right, as were those too who canonized him and died a martyr’s death for him. Then Robespierre was executed for being a despot. Who is right? Who is wrong? ...” [10] Some time later, as Pierre is resting at Torzhok on his way to St. Petersburg, the same thoughts occur to him: I shot Dolokhov because I considered myself insulted. Louis XVI was executed because he was considered a criminal, and a year later, for some reason or other; they executed those who had executed him: what is bad? What is good? .....” [11] In the first case his thoughts are followed by the decision to separate from his wife. In the second case, they are followed by his meeting with Bazdeev who reminds him of his decision to separate from his wife.

It was the belief of Tolstoy that the vast majority of ordinary men and women, for all their differences and individual idiosyncrasies are creatures of habit and routine that react in a recognizable and essentially similar way to the basic situations of life. This belief is reflected in his writing by something of a standard approach in the description of human responses to such universal happenings as love and death. One finds not only in *War and Peace* but in the early story of youth the act of getting up and taking departure that shows the character is in love. One notices a standard approach when Tolstoy portrays the profound emotional disturbance. He always concentrates on the movements of the human jaw. Not only does Prince Andrew’s jaw quiver at

moments of agitation. The same is true in War and Peace alone of Natasha, Nicholas, Pierre, Captain Tushin, a doctor, etc.

All in all, the structure in Tolstoy's novel helps us to better understand the variety and richness of life. Without this special feature, War and Peace would not have had such charms. It is this strength that plays a major role in contributing to Tolstoy's unrivaled achievement.

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## **Discuss on the Methods of Physical Fitness Training of Aerobics Athletes**

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**Keywords:** Athlete; Physical fitness; Training

**Abstract.** With the rapid development of science and technology, international Competitive Aerobics rising, The aerobics in our country is no exception, The fitness level of Aerobics athletes determines its competitive ability, But at present our country aerobics athlete's physical ability training method is not in place, the physical ability level is low, which affects the athletic aerobics competition result seriously. Therefore, this article first outlines the aerobics fitness training; Then analyzes the current situation of physical fitness training in our country; Finally, explore the training methods to improve the physical fitness level of Aerobics athletes, for the relevant personnel for reference.

### **1. Introduction**

With the progress of the world, Competitive aerobics has made great progress in the world, China's aerobics is carried out like a raging fire, prominently reflected in the increasing number of aerobics competitions. In the new era, aerobics athletes are not only involved in a sport, but also in the international competitive aerobics competition glory for the country, so it is essential to improve the performance of the competition. This pair of athletes on the physical training of a certain requirement, only a good physical training methods, in order to continuously improve the level of Physical Fitness Aerobics athletes. Therefore, the following main research methods of Aerobics athletes physical fitness training, we hope to help strengthen the Aerobics athletes, aerobics athletes' physical fitness level as soon as possible.

### **2. Summary of physical fitness training**

About aerobic physical training, it is a special kind of sports training, the training of the body in a long time high load, the strength of the ability to continue working, at the same time, it is a kind of super load training to tap the potential of the body. In terms of competitive aerobics, it requires a very high technical action, not only to the ever-changing, but also to sophisticated, only a good physical ability to ensure the perfect competitive aerobics technical movements. For Aerobics athletes, we must know the technical essentials of aerobics, and this is all the technical essentials to the physical quality of the conditions and each of the technical movements are required to have sufficient physical fitness, that is, the need to provide sufficient support for the athlete's physical fitness, so as to perfect the performance of the action. In general, aerobic fitness training can help to overcome the fatigue of athletes, but also can adjust the athlete's psychological adaptability.

### **3. The current situation of physical fitness training in our country**

Although the aerobics fitness training has been the industry's general concern, but the current Aerobics Athletes in our country are not always engaged in Aerobics professional training, the vast

majority of Aerobics athletes from the College of physical education, all of these shows that the existing physical training of Aerobics Athletes in the training of congenital deficiency problems. Secondly, the special physical and technical training phase out of touch. For example, the theory of modern fitness training is that the intensity and quantity need to be placed in the same important position, and many Aerobics athletes do not have a good coordination of the relationship between the two. In order to win, they are too high to pursue the high difficulty of Aerobics, and do not pay attention to the amount of Aerobics athletes. Secondly, the physical training content is not abundant enough, namely the aerobics fitness training content is single, most of them in the training of physical quality, few other aspects of training, and modern physical training theory thinks that the action strength, artistic expression, posture and aerobics fitness training essential content. In addition, The use of scientific monitoring equipment is not perfect, All of this makes the current situation of Aerobics in our country is very not ideal, that is, to continuously improve the level of Aerobics athletes physical fitness is imminent.

#### **4. Training method for improving physical fitness level of Aerobics Athletes**

##### **4.1 Flexibility training**

In the aerobics exercise, the flexibility of the level determines the level of aerobics athletes' skills, and can effectively prevent sports injuries. In particular, flexibility training involves the stretching of the ligaments, muscles, and the surrounding tissues, including the active stretch training method and the passive stretching training method. The active tension is divided into two aspects, one is the dynamic tension, one is static tensile; For the Aerobics athletes, flexibility training, not blindly training alone, if using the wrong method, is a waste of time. The correct approach should be effective to rely on the help of coaches and peers, and repeatedly put the ligament in place, which plays an important role in improving the flexibility of the joint. Because the active flexibility training is more in line with the actual needs, the passive flexibility training can also improve the flexibility of the body, the two can be used alone, can also be mixed use.

##### **4.2 Strength training**

The strength training of Aerobics athletes is very important. It is an indispensable important content in the physical training of aerobics. Strength training in aerobic exercise involves the strength of upper limb, lower limb strength, trunk strength and other training, each kind of strength training has different training methods. Specifically, we need to strengthen the strength of the upper pushups and support training, can push, push ups and other free fall, weight; lower limb strength need to strengthen support and jump training, can jump squat, leapfrog weight-bearing etc; Trunk strength need to pay attention to muscle training, can be used to load rotation training and UPS rotation training. In general, aerobics athlete strength training, not only to strengthen the upper and lower limbs, torso strength training, but also to strengthen the upper limbs, lower limbs, wrist, fingers and other aspects of the special training, and make the dynamic coordination.

##### **4.3 Endurance training**

Endurance is an important training link that cannot be ignored in the aerobics fitness training, the athletes must do the exercises in this area. In general, aerobics athletes not only have the power, but also to have sustained endurance work, that is to say to the Aerobics athletes' ability and high intensity continuous exercise, overcome fatigue during exercise. Because aerobics is a kind of anaerobic exercise, athletes are very easy to produce muscle fatigue phenomenon, there is no strong endurance is not enough, so the Aerobics athletes physical fitness training must pay attention to endurance training. From this point of view, in the usual aerobic exercise training, the athletes must pay attention to aerobic exercise, while the overload exercise, repeated practice, so as to help improve their muscles anti fatigue ability. Endurance training, you can use the middle and long distance,

variable speed running and other methods. Because the endurance training of Aerobics athletes is very special, it is also required to carry out the strength training, which includes the cyclic training method. This method requires the athletes to choose the training content, for example, the choice of game training method to disperse the fatigue of athletes, which is commonly used in endurance training. In addition, the complete set of exercises can also enhance the body's Physical Fitness Aerobics athletes, to enhance the level of Aerobics plays a greater role in promoting.

#### **4.4 Speed training**

To a large extent, Aerobics training at a faster pace, which requires attention to speed training. In the aerobics, athletes must perfect cooperation and achieve the action to keep up with the music, the rhythm of the music, so as to perform with art, to impress the audience deeply. Speed training is important, but it is not only fast and slow action, but also requires the Aerobics athletes to master a certain speed training methods. For example: the rhythm of the movement of athletes and muscle contraction must be a rapid change, it can directly reflect the strength of the physical strength of the athletes. Not only that, aerobics athletes but also pay attention to the training of the whole set of action, remember to be sure to complete the training within the specified time. At this time the speed of the athletes training cannot be a superficial, must be trained in place, especially the reaction speed, action quickly, displacement speed to meet the standard requirements, at the same time requirements from the load to start training, and then gradually strengthen the training. Anyway, as aerobics athletes, should be proactive, continuous learning, and strive to grasp the technical essentials, and on this basis, adhere to the training, perseverance, in order to improve the speed of the performance of aerobics.

#### **5. Summary**

In short, as an emerging sport, aerobics competition is increasing, it has fast acting diversity, these characteristics, puts forward some requirements for Aerobics Athlete's physical ability level, the quality of the athletes' physical training determines the Aerobics Athletes' sports level. This article through the discussion aerobics athlete's physical ability training method, may make the aerobics athlete better performance movement, unceasingly promotes their competitive ability. Of course, as a coach, must be carried out in the physical training of Sports Aerobics in the training cycle, at the same time, we should use scientific theory to guide practice, allowing players to choose the most suitable for your training methods, so as to make the athletes in the aerobics can make greater progress in physical training.

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# **Analysis on Problems and Countermeasures of Physical Fitness Training for Athletes**

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**Keywords:** Athlete; Physical fitness training; Problem; Countermeasure.

**Abstract.** Physical training is essential for every athlete, this is not only related to their movement of the explosive force, movement speed, but also related to their will power training. But, high physical training intensity is bound to lead to the occurrence of various sports injuries, This will not only affect the progress of the training, and even further on the physical and mental health of athletes. Based on this, the article start from the problems of physical training of athletes, and base on this, put forward some feasible countermeasures, in order to provide readers with reference.

## **1. Introduction**

The level of physical fitness of athletes has a very important impact on their performance, all sports programs need to be based on the level of physical fitness of athletes. It can be said that physical training is the premise and guarantee of all sports events. However, due to the impact of the training mode and the personnel quality and other factors, athletes in the process of physical training are still facing many unavoidable problems, these problems even further lead to sports injury in different degrees. In view of this, discuss and analyze the issues of the existing problems and Countermeasures of the athletes' physical training, in order to find out the feasibility of the training strategy, both for enhancing athletes of sport confidence, ensure normal training, or training athletes lifelong physical education thoughts have important positive significance.

## **2. An overview of the connotation of physical training**

Physical training mainly focused on the athletes' physical fitness training, athletes get physical fitness, after the nature of the body not only has a good ability to adapt to the environment, but also has the power of metabolism. According to the classification of competitive sports items, we can divide the physical training into two kinds: special physical fitness training and general physical training. In these two types of physical training, based on the general physical training, special physical training needs to be built on top of this to be able to be carried out smoothly. The so-called general physical training, the training methods are different from the special training methods, mainly through a more general way to improve the athletic ability of the athletes. The special physical training, as the name suggests is a set up in order to improve the athletes training methods, have a great role in promoting this special type of training athletes to enhance performance, potential athletes play, help athletes get more excellent results.



### **3. Problems in physical training of athletes**

#### **3.1 Lack of awareness of physical fitness training**

At present, most of the athletes' awareness of physical fitness training is still staying in the general physical training. They can't clearly know the meaning of physical training. This leads to their limitations in general training when they are training, the inherent potential of the athletes can not be excavated, led to the plight of stagnant training. After a lot of practice to prove the importance of special training, the presentation of the general physical training advantage is incomparable. Either coaches or athletes should strengthen the special training of the understanding, to realize the organic integration of theory and practice, in order to truly stimulate the inherent potential of athletes, so as to achieve the ideal training purpose.

#### **3.2 The training method is more closed and rigid**

Due to the traditional concept of the experience and effect of the training, the athletes' physical training method is relatively simple; too much emphasis on the completion of the training task, but not the actual training of athletes and coaches in the organic integration, in carrying out training activities, training, and the effect is not obvious. In addition, the coach has been in the continuation of a single training mode, cannot be based on the actual athletes to take the most appropriate training. In this training mode, the athletes will only follow the pace of the coach, the mechanical system to repeat the study, there is no personality to speak of, the parties to the information is also increasingly closed, thinking is increasingly narrow.

#### **3.3 Training plan is not scientific**

Due to their own conditions and the impact of the objective environment, there are some differences between the character of the athletes, physical fitness and athletic ability; this also led to their ability to adapt to different physical training. In the face of the differences between athletes, coaches have the responsibility to pay attention to the growth of each athlete, at the same time as far as possible to create conditions for different levels of athletes in the original basis for the greatest development. However, if the coach in training, ignoring the individual differences between athletes, using the unified training plans, then not only cannot achieve the desired effect, will lead to athletes (athletes) injury accident, let alone improve the physical fitness level.

### **4. The feasible countermeasure of athlete's physical ability training**

#### **4.1 Strong ideological education**

Thought is the biggest driver of behavior, to ensure the physical training project carried out smoothly, it must be separated from the traditional concept of imprisonment, to establish a new concept, with benign development trend of new era, and a new concept throughout the training activities. Only in the scientific and efficient, modern physical training concept under the leadership, to enhance the ideological understanding of each coach and athletes, in order to effectively improves the efficiency of physical training. The reason why the training effect is low, and the coaches, athletes to scientific training, lack of understanding, understanding is not clear about. Only to strengthen the coaches, athletes' ideological education, so that their ideological level to achieve scientific training in this layer, in order to better carry out physical training.

#### **4.2 Optimization of physical training methods**

There are many sports programs, and the methods of physical fitness training for different projects should also be different. Some coaches only focus on their own sports, and rarely communicate with other coaches, let alone pay attention to other projects in the experience and training methods. Along with China's sports undertakings in the international status of every day, sports competition is

increasingly fierce competition, the coaches in order to obtain good results, have their own training "secret" to grasp firmly, unwilling to share with others, some athletes even put your training methods as a weapon. In view of this situation, we should pay attention to the following two points in the physical training: Firstly, The coaches should actively learn knowledge and training methods of frontier, to deepen the understanding and practice of physical training, and according to the individual differences between athletes, choose appropriate training methods, to give full play to the subjective initiative of athletes, so that they can gain success in the sports competition game. Secondly, pay more attention to the fusion of eclectic, in the choice of training methods, to absorb the essence of the purpose of physical training, the essence of the melting furnace, to better enhance the training effect.

### **4.3 Make scientific and reasonable training plan**

Athletes' physical training in the "one size fits all" problem has been criticized by the coaches. The level of physical fitness of athletes uneven is an indisputable fact that the coaches should advance for athletes to carry out the investigation, according to their age, gender, health status and sports skills, in-depth analysis of training activities, seriously study the participation of body training athletes, they predict what action is not easy to master, what technology the action is vulnerable to injury, be aware of, advance the development of the corresponding injury prevention programs. Secondly, in the physical training work, coaches should according to the actual situation of every athlete, change the status quote of training objectives and requirements of unified planning, comprehensive use of various methods to help athletes master the correct run, jump, run and action essentials, enhance the skills and abilities of athletes training time. In addition, the coaches according to the athlete's own ability, reasonable arrangement of exercise load, especially should pay attention to the partial burden locomotion capacity and injury after sports activities, to avoid local damage caused by single training.

### **4.4 Do a good job in training recovery**

At the end of the physical training activity is the process of converting the athletes from the intense state of motion to the quiet state. At this time, coaches need to choose some help to eliminate fatigue, adjust the mood, promote the recovery of physical function of relaxation, small load, so that athletes can express more tension from the transition to a relatively quiet state, the athletes physiological, psychological relax. For example: the coach can make some dance moves with the rhythm of the game, game, and equipped with auxiliary music, let the players relax. This idea can quickly transfer athletes cerebral cortex motor nerve excitement, and can make the motion organs athletes relax, promote the recovery of the body function, in order to reduce the occurrence of the rate of sports injury.

## **5. Summary**

In summary, the physical training is one of the indispensable players' daily training content, training project with other incomparable significance for athletes. We have to do is pay attention to the importance of the athletes' physical training, training for the existence of "problem", continuous innovation, constantly sum up experience, repeated comparison test, in order to find the best training strategy, improve the athletes' physical fitness and health.

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# Research on the Current Situation and Countermeasures of Basketball Core Strength Training in China

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**Keywords:** Basketball; Core strength; Present situation; Countermeasure.

**Abstract.** As a new concept of physical fitness training, core strength has been introduced into our country, and its unique training effect has been favored by all kinds of sports. Basketball as a kind of sport, it is natural to need the core strength to help the athletes complete the basketball technology and tactics more effectively. But through the study we found: Because the research on the core strength training in our country starts late, most sports items include the core strength training of basketball is still in the immature stage. This paper mainly from the core strength of the role of basketball, Through analyzing the problems existing in the training of the core strength of the current basketball, proposing several methods to train the core strength training of basketball and Hoping to provide some reference for the study of the core strength training of basketball.

## 1. Introduction

With the development of the times, the core strength has become an important part of the physical training of all kinds of sports in our country. Basketball as a branch of sports, the core strength is also essential. The so-called core strength refers to the attachment in all muscles and ligaments of the core areas under the control of the neural contraction produced, to stabilize the gravity of human body, body balance, transfer of human motion required power for the main purpose of power. [2] Walking, running, jumping, throwing and other technical movements in basketball, all the power is transmitted from the bottom up, so it needs a good core strength to connect the body, the strength of the lower extremity. The core strength of the basketball movement is the force involved in all parts of the pelvis above the shoulder joint.

## 2. The significance of the research on the core strength of basketball

### 2.1 It has an important role in the completion of the technical action

Basketball has a certain requirement for physical fitness. Without physical quality to ensure that any technical action cannot effectively play, especially in the high intensity of the game, the role of physical fitness is more obvious. In basketball, physical fitness is the core strength of basketball. Core strength can improve the athletes from the leg to trunk strength, make the motion link physical coordination work orderly, and can make the distal limb in the best position to complete the technical movement with the best speed and the best time. So, the core stability is of great significance for the completion of the technical movements.

### 2.2 Playing an important role in the promotion of special forces of basketball

The special strength of basketball is a criterion to measure the level of technical ability of basketball players. Basketball is a kind of ball game, which is characterized by its flexibility, speed, balance and

agility. These qualities are important links with the core strength. For example: jump shot when running fast; when suddenly change to dribble and fight in the fierce body balance control ability is the embodiment of core strength. Generally speaking, the stronger the core strength of the players, their basketball skills and the ability to display technology is stronger. Therefore, to carry out the special strength training of basketball, we must focus on the core strength as the key content of special training.

### **2.3 Reducing the probability of injury during training**

Basketball as a physical confrontation movement, in the high speed of the offense and defense conversion, in the fierce physical confrontation, it is easy to appear all kinds of sports injury. In various types of injury, mostly is muscle damage. Muscle damage is mostly caused by muscle fatigue. The core strength training can effectively improve muscle endurance, reduce the risk of muscle fatigue in the state of injury. In addition, the waist injury is also a large number of basketball players often appear injuries. The core strength of basketball is basically in the waist region, so the core strength training can effectively reduce the waist injury.

## **3. The current situation of the core strength training of basketball in our country**

### **3.1 Coach professional ability is not strong**

With the internationalization of the basketball movement, some advanced training concepts of NBA are gradually introduced into China. At this stage of the domestic high level basketball league, the teams are equipped with a professional fitness coach. But in other categories of basketball team, physical fitness coach is basically a person as a coach. Even in a few teams equipped with physical fitness coach, its professional competence and understanding of the core strength of the training is not deep enough, so the lack of training arrangements for the core strength of systematic, planned and targeted.

### **3.2 The coach's lack of experience in core strength training**

Generally speaking, basketball coaches have a high degree of understanding of the technical and tactical training of basketball. However, due to the introduction of the concept and method of core strength training late, most coaches are still in the initial stage of core strength training. At this stage, it is hard to tell the general strength training of coaches and professional core strength training for a clear distinction, which leads to the confusion of strength training, which not only affects the core strength training effect, also led to the general physical training and go astray, affect the players technical and tactical ability to play.

### **3.3 Lack of awareness of the importance of the core strength of athletes**

In competitive sports, athletes are aware of the important role of physical fitness. In all kinds of sports teams at all levels, physical fitness is an important content, basketball is also the case. In daily training, physical fitness is an essential part. However, due to the shackles of the traditional concept of training, most of the players believe that the basketball fitness is endurance training and strength training on the lower extremity and other training has no effect on basketball skills and tactics.

### **3.4 Core strength training is not systematic**

The coach's professional ability is weak and the players lack understanding of the core strength, leading to a long-term strength training in basketball coach, spend a lot of time and energy for athletes on the skills and tactics training, the athlete's strength training is not well considered, the core strength training arrangements are insufficient planning, and the lack of long-term performance, thus affecting the development of professional core strength. More seriously, there are some coaches afraid of strength quality training will have a certain impact on the height of the basketball players, and not the implementation of certain strength training for athletes.

## **4. Basketball core strength training method**

### **4.1 Strengthen basic physical training**

Basic physical fitness is the basis of the core strength of all sports events. The core strength must be built on the basis of physical training. Departure from the basic physical training directly to the core strength training not only can not improve the core strength, but also make the athletes have different levels of sports injuries. Specifically, physical training is mainly refers to the force, wrist, limb weakness, waist force and systemic coordination force etc., then is the speed, sensitivity, bounce force, flexibility and endurance of special strength training and then is all kinds of offensive and defensive skills training linked to the training content of basketball.

### **4.2 Core strength training**

The training method of the core strength of the basketball game is usually the training method for the technical and tactical training of basketball. It is the ability to enhance muscle operation by taking a series of targeted biological improvement measures and methods on the human body movement system. As far as basketball is concerned, the training of core strength is the training of waist and abdomen strength. The development of waist and abdominal muscles can improve moving, jumping, shooting, rebounding and passing the ball, the ball quality breakthrough series of action is completed. Specific training methods are as follows:

*4.2.1 Abdominal curl. In the training process, try to touch the feet by hands, and as far as possible back arch. When sit up training in the plane, can take the slope or sit up to increase the weight of waist and abdominal muscle strength*

*4.2.2 Jumping training. Jumping training can effectively improve the ability of waist and abdomen contraction, and then improve the waist and abdomen strength. The jump can take place straddle, continuous leapfrog technical movements*

*4.2.3 Dangling legs. The hands grip bar, legs sagging by state. Then lift the legs to level condition slowly as the axis of Waist. Through this training can effectively improve the muscle endurance of the lumbar and abdominal muscles. After a period of training, you can improve the angle of the legs or increase the weight of the legs to improve the exercise load*

### **4.3 E Combination of core strength training and technical and tactical training**

The purpose of core strength training is to improve the use of basketball techniques and tactics. Therefore, in the core strength training must be combined with the basketball technical and tactical training, or core strength training will lose its proper role. The specific approach is to strengthen physical confrontation in the process of technical and tactical training, make the players feel the fight in the process of maintaining the normal technical and tactical play the core strength. Core strength training is after technical and tactical training, the core strength training has the significance.

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## Cultural Factors in Translation

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**Keywords:** Language; Culture; Translation; Cultural factors.

**Abstract.** There is a very intimate relationship between Language and culture. They cannot exist without each other. Translation means interpreting the source language into target language, so cultural factors are involved in translating. In this paper, the author analyzes the relationship between language, culture and translation, then further deals with how to translate when meeting cultural factors.

### 1. Introduction

Translation is a craft consisting in the attempt to replace a written message and/or statement in one language by the same message and/or statement in another language [1]. Tytler states that “ a good translation is one in which the merit of the original work is so completely transfused into another language as to be as distinctly apprehended and as strongly felt by a native of the country to which that language belongs as it is by those who speak the language of the original work” [2].

### 2. Organization of the text

#### 2.1 The relation between language, culture and translation

A language is also a part of a culture and the meaning of any text refers directly or indirectly to the corresponding culture. Ultimately, words only have meaning in terms of the corresponding culture. Without the knowledge of the beliefs and practices of other cultures, a translator's perspective of the world is tragically restricted. A translator may face many difficulties of linguistic transfer, but the greatest difficulty in translation, as more and more translators have come to realize, lies in the differences of two cultures [3]. The most serious mistakes in translation are made because of ignorance about the views and values of other cultures. Differences in culture almost automatically mean differences in language. Language represents the culture because the words refer to the culture, as the beliefs and practices of a society.

Language is also indispensable for the functioning of a culture and for transmitting it to succeeding generations. Language and culture cannot exist without each other [4]. Between language and culture, there is always an interactive influence since Classical and early Christian terminology and culture assumed a trichotomist view of human personality in terms of body, soul and spirit, people argued that since there were three such terms in Greek and in Hebrew, there must be three parts of aspects of human existence. But during the Renaissance people began to challenge such ideas and gradually even some theologians adopted a dichotomist distinction between the physical and nonphysical aspects of human life, but more recent research in psychology, psychiatry, and neurophysiology leaves people with only fabulous neural networks with trillions of readily activated series of synapses.

Cultural also has an important influence on language, as should be obvious in new ways of talking about women's roles in society as their economic independence and power increase, especially in the United States. The poets see have all become poets, and chairman and chairwoman have become simply the chair. And for some persons, God is both he and she.

From all the above, we can see the intimate association between language and culture. Just as Sapir or Whorf declares that "No language can exist unless it is steeped in the context of culture; and no culture can exist which does not have at its center, the structure of natural language." That is to say, language and culture are intimately connected: language is the heart within the body of culture. Perhaps we can use the analogy employed by Susan Bassnett to illustrate the relationships of language, culture and the translator: "In the same way that the surgeon, operating on the heart, cannot neglect the body that surrounds it, so the translator treats the text in isolation from the culture at his peril [5]."

We have analyzed the relation between language, culture and translation, well, in the practice of translation, how to deal with the cultural factor? How to make the translated version understandable and acceptable? This paper will use examples to illustrate this.

## 2.2 Special examples of cultural translation

Nida categories culture into five classes as far as translation is concerned: ecology, material culture, social culture, religious culture and linguistic culture. Here I will illustrate the first four categories in detail.

### 2.2.1 Ecology

In discussing the translation of 东风 and 西风 in literary works, Dr QianGechuan points out the different perception on the part of the Orientals and the Occidentals towards "east wind" and "west wind". The east wind is to the Orientals what the west wind is to the Occidentals. To people of Oriental countries, the east wind is warm, pleasant, symbolic of spring and is associated with the life-giving vernal breeze [6]. This can be seen from such lines 春城无处不飞花, 寒食东风御柳斜 (by Han Hong, a poem entitled 寒食). Hu Zhuanglin translated this into:

All over the capital catkins flew wantonly  
A scene of spring so significant:  
On "cold food" the east wind wilfully  
Made the imperial willows slant.

To people of the western world, just the opposite is true the east wind is snapping cold. This can be seen from Charles Dickens' sentence:

How many winter days have I seen him,  
Standing bluenosed in the snow and east wind!"

And we have in English such expressions as "a keen east wind" (James Joyce) "biting east winds" (Samuel Butler), and "a piercing east wind" (Kirkup). Because of the different perception towards the east wind and the west wind by people of the Eastern Hemisphere and the Western Hemisphere, Dr Qian seems to have suggested that "东风 can be translated into "west wind" and "西风 into "east wind" and vice versa.

### 2.2.2 Material culture

Take food and clothes for example. There are usually five ways of translating these cultural expressions

- a) Simply translate its literal meaning, for example, hot dog =热狗
- b) Explain the meaning, for example, hot dog =红肠(sausage)面包 (bread); bikini= 三点式泳衣(three-point bathing suit)
- c) Transliterate the word, for example, sandwich=三明治; bikini=比基尼
- d) Transliterate the word add a generic term, for example, Hamburger=汉堡+包 (bread)=汉堡包; parka=派克+大衣=(overcoat)=派克大衣



e) Translate the meaning of the word and add a generic term, for example, cocktail= 鸡(cock)+尾(tail)+ 酒(wine)=鸡尾酒; swallowtail=燕(swallow)+尾(tail)+服 (garment) =燕尾服 [7].

### 2.2.3 Social culture

We would meet trouble in translating such expressions with different symbolic values as “龙”. In China, and perhaps in the Orient as a whole, 龙 is a symbol of prosperity and good luck; a symbol of the emperor; a symbol of a great man or a well-developed country or area, for example,龙凤呈祥 (prosperity brought about by the dragon and the phoenix—excellent good fortune); 亚洲四小龙 (the four little dragons in Asia—referring to South Korea, Singapore, Hong Kong and Taiwan). In China, 龙 is also a symbol of the Chinese nation, for example, 龙的传人 (descendants of the dragon—the Chinese.) In the Western World, however, the dragon is a symbol of danger and evil. We may find such examples in the New Testament of Bible as “And he (the angel) laid hold on the dragon, that old serpent, which is the Devil, and Satan, and bound him a thousand years.”(Revelation 20:2, Red Letter Edition, King James Version) In Beowulf, the Anglo-Saxon epic(c. 700A.D.), the dragon is referred to as “the monster,” “the evil spirit (that) began to vomit flames, burn bright dwellings.”

### 2.2.4 Religious culture

Look at the following example:

I look at the sunlight coming in at the open door through the porch, and there I saw a stray sheep—I don't mean a sinner but mutton—half making up his mind to come into the church. (David Copperfield)

A great number of Chinese readers are not familiar with Bible or the Christian World, so they cannot understand why the author here put “sheep” together with “a sinner,” they are easily confused. Actually, in Bible, “stray sheep” (lost sheep) refers to all the people in the world who commit original sin. Concerning this religious cultural reflection, Zhang Ruogu added a footnote to his translated version explaining “the stray sheep” which is a better way to solve this problem.

## 3. Summary

If we push our point of discussion a little further, we may maintain, as Nida puts it, that “culturally strange objects must be retained because of their symbolic values for it is quite impossible to deal with any language as a linguistic signal without recognizing immediately its essential relationship to the cultural context as a whole”.

Language use involves not only verbal usage but cultural sensitivities. In fact, the cultural factors in international communication are far more significant than the purely linguistic differences. The meaning of a word must be determined by both syntagmatic contexts and the cultural contexts. Furthermore, the ideal translators are not necessarily those who are readily bilingual and bicultural in daily affairs, but those who are unusually competent in their mother tongue (normally the receptor language in the translation process) and who have a profound knowledge of the culture of the source text.

## 4. Acknowledgement

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**Chapter 3:**  
**Information Technology and Social Sciences**



# Analysis of the Double 11 Ouyeel Business Promotion Effectiveness

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**Keywords:** Electronic commerce; Double 11; Ouyeel; Promotion; Results

**Abstract.** This document explains and demonstrates how to prepare your camera-ready manuscript for Trans Tech Publications. This paper mainly studies the ouyeel business in Singles' Day under the background for consumers to carry out all kinds of effective promotion activities, research promotion effect, based on the analysis of the ouyeel's 2013 to 2015 sales data, for promotional month at November 2015 and December, which in December than in October sales revenue growth of 17%, and in 2014 than in 2015 sales revenue growth of 26.79%, sales revenue grew by 88.69% in 2015 than in 2013. The results can be drawn from the promotion. The store, the location of the consumer is very correct, the promotion is very successful.

## 1. Introduction

### 1.1 Research background of the selected topic

China is in the historical turning point from the industrial economy to the information economy, a lot of changes are fundamental Long term. On the basis of the ouyeel e-commerce business is a Business Company Internet plus steel, in accordance with the government, social participation, enterprise operation, cooperation principle, to the enterprise independent mode of operation. With the establishment of the ouyeel business, the convenience of buyers and sellers, it is both to save valuable time. And the annual double 11 for businesses is a war without smoke of gunpowder. Here, the ouyeel launched a series of promotional activities, in order to enhance user activity participation enthusiasm, stimulate customer consumption, so as to improve sales.

### 1.2 Literature review at home and abroad

Domestic development: 10 years ago, the iron and steel industry, or rely on the information dissemination of the paper media. As the year of the Lange steel weekly etc. After 2000, to my steel, as the representative of the industry website building Chinese, marking the iron and steel industry began to enter the field of internet. Now, ouyeel, Central China steel spot network as the representative of the e-commerce trading platform has begun to take shape. The traditional marketing methods is largely limited by the steel industry trade business market development space, the limited human resources and financial resources so that the majority of industry participants, The future development of the industry, we must break the traditional marketing methods' commerce, such as the spring of the Miao, for the entire industry has brought infinite vitality.

At present, the international steel online is the first to build a global steel e-commerce platform integration leader. to lead the industry trends, to create a win-win platform, The cause for the development of the concept of achievement, for China and the world's steel supply and demand sides to build a fast, efficient, honest online trading service platform. International steel online by the future development of the rapid development of the electronic business platform for the train, is bound to build a win-win platform for all participants to build wealth!

## 2. Analysis of sales promotion

### 2.1 Enterprise general situation

The ouyeel is taking Baosteel Group, the integration of the original steel electronic trading related resources, to "service oriented production system" business model, relying on the Internet, Internet of things, big data, mobile Internet and other new technical means to create a set of information, transaction settlement, logistics, warehousing, processing and distribution, Investment and financing, financial intermediaries, technology and industry characteristics of services and other functions as one of the eco steel service platform. The ouyeel build ecological service platform for the whole industry, the whole industry chain, built-in five modules, respectively is business, logistics, finance, data, materials. The wisdom of the ouyeel business platform for electronic business services is independent of the industry's interests outside the chain of third party platform, professional team to create an open, fair steel business circle. Resource aggregation, intelligent, automatic payment, seller free report. Ouyeel electricity supplier buyer service is wisdom 7\*24 online community - national customer service, fast response, to create a transparent and safe steel.



Fig.1.Ouyeel's index

### 2.2 Market environment analysis

Steel industry and the development of the macro environment has a strong correlation, its production and sales by the economic environment, the country's macroeconomic policy regulation, technical level, and many other factors.

Policy and legal environment: Since the 12th Five-Year plan, the state will be listed as a national e-commerce strategic emerging industries, ministry of commerce issued the "opinions on promoting the application of electronic commerce" in November 21, 2013, and launched the ten major measures to promote the development of electricity suppliers, and the country has promulgated a number of policies related to the iron and steel industry. The policy is expected to strengthen the further development of steel e-commerce.

Economic environment: From January to July 2014 the national fixed asset investment compared with the same period a year earlier growth of 17%, down 0.3 percentage points compared with the growth rate from January to June. However, looking to the future. This provides a good opportunity for the sustainable and healthy development of the steel industry and the transformation and upgrading of the industry.

The social and cultural environment: Citizen's environmental protection consciousness, consumption culture, ethics, customs, values, traditions and constitutes a social and cultural environment. of steel enterprises, the social and cultural environment including the environmental awareness of residents, employment values, etc., the society of iron and steel enterprises to achieve zero pollution, protect the environment and provide more employment opportunities, reflect people's values and other aspects put forward higher requirements.

Environmental Technology: ouyeel have design experience in more than ten years of business platform, system platform overall planning and design consulting services, platform system construction and the platform of cloud hosting service.

Through data storage, data mining and other data technology, the platform needs to predict and price forecasts, the platform of product precision marketing and logistics optimization.

### 3. Implementation of the promotion plan

#### 3.1 Screening of target populations

The ouyeel business according to consumer purchasing habits, geographical differences and target consumer, to carry out a series of promotional activities for these consumers in the region (backward city) shop, as shown in the red area below:



Fig.2.Ouyeel promoton areas

#### 3.2 Enterprise general situation

Promotion time: November 11, 2015 -2015 December 31st, eg: West

West: Bayi steel

1) During the event, in bayi Steel activities month project page every day bayi praise a that have a chance to get "bayi steel" store coupons.

2) During the activity, every day to buy "bayi steel" shop for the entry into force of the first 10 orders, each one will receive an additional 100 points (limited to a single company each account every day);

3) During the event, all the purchase of the bay steel shop and the entry into force of the order, each company account every day, there is a random order can get ten times the points;

Central China: TISCO

TISCO activities during the week, each transaction during 9:00 to 11:00, 14:00 ~ 16:00 six punctuality, punctuality every generation of the top ten "TISCO" store product orders per ton vertical reduction of 30 Yuan.

#### 3.3 Enterprise general situation advertising delivery

Through the rich and rich media creative PC and mobile phone media quality, taking double11 of the ouyeel investment preferential information to the core group of gratitude,

Click to attract consumers to participate in the campaign.



Fig.3.Ouyeel PC advertising chart

#### 3.4 To build the network platform

In order to better implement the promotion strategy, the ouyeel business platform to build special promotions page in the PC end, mainly include: the promotion that, index banner promotional activities simple display, banner active link entry and promotion page.

#### 3.5 Positioning of promotional products

First of all, the use of Baosteel's technical marketing strength and the end customer steel products using the technology to understand and comb, for different standards and the grades of the steel mills are compared, followed by the purchase habits of consumers to collate and mining, and ultimately decided to carry out promotional activities in accordance with the shop.

Ouyeel business platform with six races, respectively: ouyeel south, west ouyeel, ouyeel central, ouyeel north and east, ouyeel northeast. The double 11 promotion campaign store has bayi steel, HBIS, TISCO. The bayi steel is located in Xinjiang, HBIS in Hebei, TISCO group is located in Taiyuan, this three stores to carry out promotional activities, in fact, the focus is to stimulate consumer spending in the west, north and central regions of china.

### 3.6 Promotion expenses

The promotion is based on the cost of the shop is different from the cost of delivery is different, because the ouyeel's promotional incentives are reward, the ouyeel integral can be specified when the cash coupon, 1 tons reward 1 points, not enough to calculate the 1 tons in accordance with 1 tons, the 1 points a piece of money. Here, the promotion of the cost of the shop according to different stores were calculated.

Bayi steel promotional costs during delivery activities shall include, every day to buy the first 10 orders of bayi steel shop effect, each one will receive an additional 100 points (per day limit of a single company account), this cost is denoted as X1, as well as during the event, all the purchase of the bayi steel shop and take effect of the order, each company account every day, there is a random order can get ten times the points. This charge is recorded as X2; Bayi steel promotional expenses to be recorded as X,  $X=X1+X2$ , X1 and X2 are calculated in the background throughout the data system, Calculated by  $X1=100*10*50=50000$ ,  $X2=23118$ , so  $X=X1+X2=73118$  Yuan.

HBIS promotional costs during delivery amount including activities, every trading day at 14:00~19:00 six on time, the first "Handan" stores each force orders for the products on time, will get an extra 50 points, this charge is recorded as Y  $Y=6*50*50=15000$  Yuan.

TISCO promotion expenses during delivery amount including the activities of each trading day 9:00~11:00, 14:00~16:00 six on time, every time before the ten generation "TISCO" stores product orders, Per ton of 30 yuan per ton, the cost of recorded as Z  $Z=6*10*30*50=90000$  Yuan.

## 4. Promotion effectiveness analysis

### 4.1 Data description

This paper used data are the raw data obtained from the ouyeel business in the background ERP, and then after a follow-up of the data can be used to become the paper. As a result of the need of data analysis, the data items related to the representative and analysis tasks are extracted, ouyeel business sales data extraction month, order, income, tonnage, pro five, the number of extracted data, through statistical data become available after finishing data, as shown in table 1.

Tab.1. Ouyeel Sales data after treatment

id	date	order	incomel	tonna	prot
1	2015/1/3	0	0	0	0
2	2015/1/4	962	106414.3	73.71	0
3	2015/1/5	1034	137618.1	101.4	0

### 4.2 Equations

#### 4.2.1 Product analysis

The ouyeel store promotion business, Choose "bayi" steel "HBIS" "TISCO" for the promotion of the shop. Because these three kinds of shops are large steel mills, steel was established in a long, large-scale, steel production technology advanced, with high quality steel and services. Moreover, three steel mills are located in different regions, this for consumers in different regions, the convenience of consumers, greatly reducing the cost of transport.

#### 4.2.2 Customer base analysis

Customers focus on the choice of the west, north and central regions of the consumer. Because these areas are lagging behind the city, for the development of the city, the scale of urban construction is relatively large, so the need for more steel. And at present with the development of economy and



society, e-commerce has gradually developed into the remote rural areas, the development and construction of rural areas can not be underestimated, customer base in these areas is also a potential customer base.

#### 4.2.3 Analysis on the relationship between sales revenue and month

The ouyeel business in 2015 double 11 according to the different two shops carrying out various promotional activities, this paper use excel software in the PivofTable screening and merge the data table, as shown in table 2.

Tab.2.2013-2015 annual sales income statement

Month Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2013	0	0	0	0	0	6243.62	12982.08	129.74	67411.45	65648.72	79628.14	7656.78
2014	1015.31.6	134.427	1201.96	15170.9	1640.81	2035.99	18510.7	171959	211501	18754.4	228353	2209.53
2015	1354.36	169.967	1997.12	23679.1	2427.96	2590.01	23827.8	246647	251733	25652.4	296402	3095.39

According to the table, to make 2013-2015 sales revenue line chart, as shown in figure 4.

The promotional activity cycle for the November 10, 2016 -12 31. It is evident from the above picture that between October 2015 and November, sales revenue has been slowly increased state, in 2015, October to November, the preparation stage for the ouyeel business promotional activities, although not started, but the page has been published, so still attract customers to patronize. Between 2013 and November, between 2015 and December, 2013 and 2014 sales revenue is lower, compared to October 2015, November and December sales showed a significant increase in the state, and sales revenue growth is relatively fast, from 2565244640.63 Yuan in October to 3095397317 Yuan in December, an increase of 17%. And in November 2015 to December, During the promotional activities carried out for the ouyeel business. So obviously, this promotional activities. more successful.

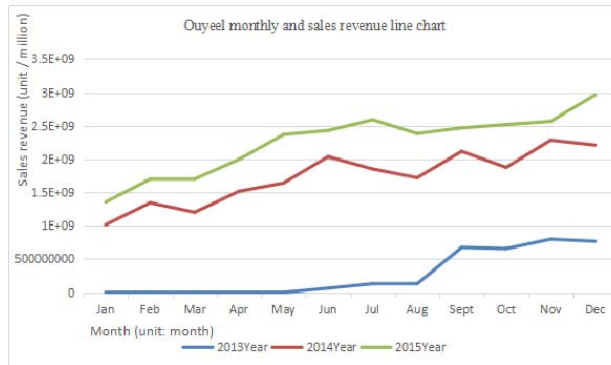


Fig.4.Ouyeel monthly and sales revenue line chart

#### 4.2.4 Sales analysis and relationship months

Due to the promotion, sales of each month is different. According to the the daily sales, make the sales of 2013-2015 histogram, as shown in figure 5.

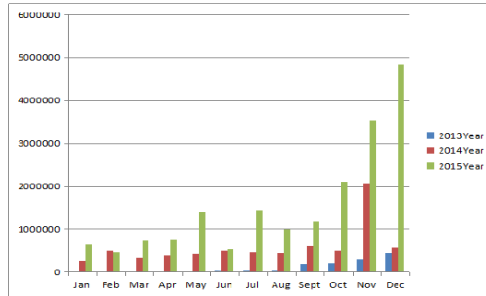


Fig.5.Ouyeel the sales of 2013-2015 histogram

After the ouyeel's continuous efforts and innovation, from the sales and this can be seen in the history gram, sales from 2013 to 2015 are increasing year by year, and the rate of growth is relatively large, especially during the period of November 2015 to December, the growth rate is extremely fast, sales from November 2015 to 4828102.19 tons in December to 3528962.51 tons, the growth rate of 26.9%, Can highlight the significant growth in sales success of the ouyeel business promotion campaign.

### 5. Summary

Through the analysis of the ouyeel's "double 11" online promotion, we can see that the "double 11" hidden business opportunities, live "double 11" this special marketing opportunity, actively embrace the Internet, to carry out promotional activities in ouyeel, can increase sales, open up the market, more can bring profits to the enterprise.

As we all know, promotion is a "double sided", as long as the improper operation of promotional activities, will damage the image of the enterprise, reduce consumer loyalty, making the loss of profits. But the temptation of sales, and constantly make us frequently carry this double-edged sword. The knife takes courage, surgeon requires skill, only do better when, is the pursuit of the realm. A clear understanding of the situation, see their positive, "self-cultivation". ", no matter how the market changes, the ouyeel provider will well.

### 6. Acknowledgements

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# Research on Cloud Computing Platform of Flipped Classroom Model for Software Engineering Professional

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**Keywords:** Software engineering; Flipped classroom; Cloud computing; Teaching platform

**Abstract.** "Flipped classroom" is the reverse arrangement of knowledge teaching and knowledge internalization, which plays an important role in improving students' practical ability and innovation ability, and it is the interaction between teachers and students, and the environment of students' autonomous learning. Cloud computing platform is to use technology to subvert the "teaching" and "learning", is an effective way to implement the "flipped classroom" of modern technology. Firstly, this paper introduces the flipped classroom, Cloud Computing Assisted Teaching Application and research status. Then, we construct the software engineering "flipped classroom teaching model and corresponding cloud computing architecture teaching platform. Finally, analyzes its main function modules.

## 1. Introduction

Computer class course content is abstract and difficult to understand, is not easy to learn, learning is difficult, many students encounter difficulties prone to fear, lack of learning motivation and interest, and even mental weariness, truancy rate is high, and form a vicious circle. Software engineering is a comprehensive applied subject, and the software engineering specialty is practical, engineering and practical. Students are difficult to rely on the theory of software engineering to learn to develop a real software, but in the "hands-on" and "real" experience and grasp the idea of software development. Traditional computer courses teaching theory, light practice, "learning", "use" out of touch, the knowledge of teachers to teach students, students of active learning, low enthusiasm of students. The characteristics of the computer courses themselves formed the more theoretical explanation, the less the students overall harvest cycle. Many scholars put forward the project driven teaching method, strengthen the experimental and practical training, improve students' practical ability, thinking ability and innovation ability. And "flipped classroom" is effective implementation of the project driven teaching method in the teaching mode, the key to success of the flipped classroom is the combination of teaching tools and technology, the use of cloud computing and other modern information technology is the important means and resources in the "flipped classroom" can be achieved.

## 2. Software engineering "flipped classroom" cloud computing platform architecture

### 2.1 Software engineering "flipped classroom" teaching model

Franklin Institute of the United States Robert Talbert (2011), combined with the linear algebra curriculum practice summed up the "flipped classroom implementation model and obtain the good teaching effect, as shown in Figure 1," flipped classroom "including before class and class in two

stages: before class, students at home watch video teaching, and the practice of; class, students completed a small amount of evaluation, and then through the problem solving to complete knowledge internalization. Finally, the summary and feedback.

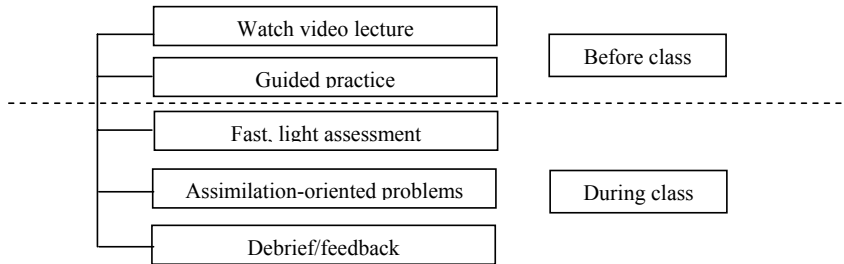


Fig.1. Talbert Robert "flipped classroom" teaching model

Software engineering has a strong practical, theoretical knowledge of the abstract, difficult to understand, not easy to learn. Therefore, it is necessary to improve the "flipped classroom" teaching model proposed by Talbert Robert, which is more suitable for software engineering. As shown in Figure 2, in front of the class, students at home watch video teaching learning software development theory and need a timely and teachers to communicate, answering for the training, otherwise, the student will "quit", it is difficult to achieve the goal of the course of study. In order to let the students in class have more time for training program, students in the course of evaluation to move in front of the class, students training process to complete the testing process and the teachers can have a statistics, students master the class before learning. During the course, in a real project development as the main line, the teacher first simple explain doubtful points most of the students in the course of learning concept, knowledge points, then there is a brief introduction to background of software project, the project objectives, guide the students to understand the project tasks, group discussion and project planning, requirement analysis, system design, coding and achieve and software testing. In the software development process, the students can communicate, research questions, we to the teachers question, teachers to answer their questions, and proper inspiration theory knowledge, continue to guide students to think deeper, continuous upgrading of students in the process of "training - thinking question coaching, straighten out between the knowledge of relevance, until the students submitted, display design results, the teacher carries on the review summary. Further improvement on the theory.

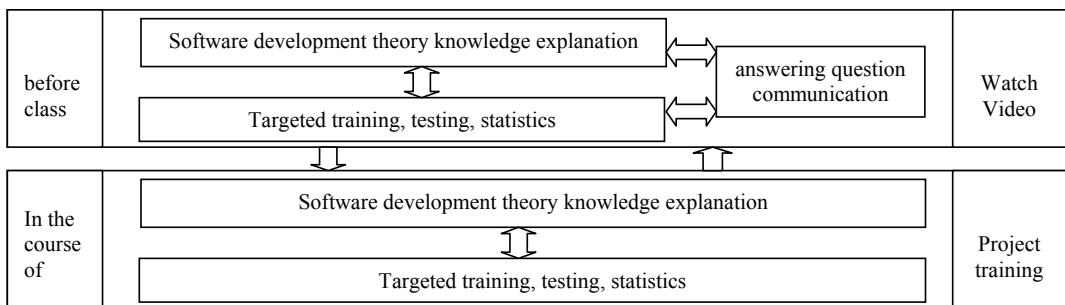


Fig.2. "Flipped classroom" teaching model of software engineering

## 2.2 Software engineering "flipped classroom" cloud computing platform architecture

Before class students watch the video, training and test, management and monitoring of students, the students learning state information statistics and obtain, submitted to the communication between

teachers and students, students in the classroom to software development management and document, evaluate the result of students need to network teaching platform.

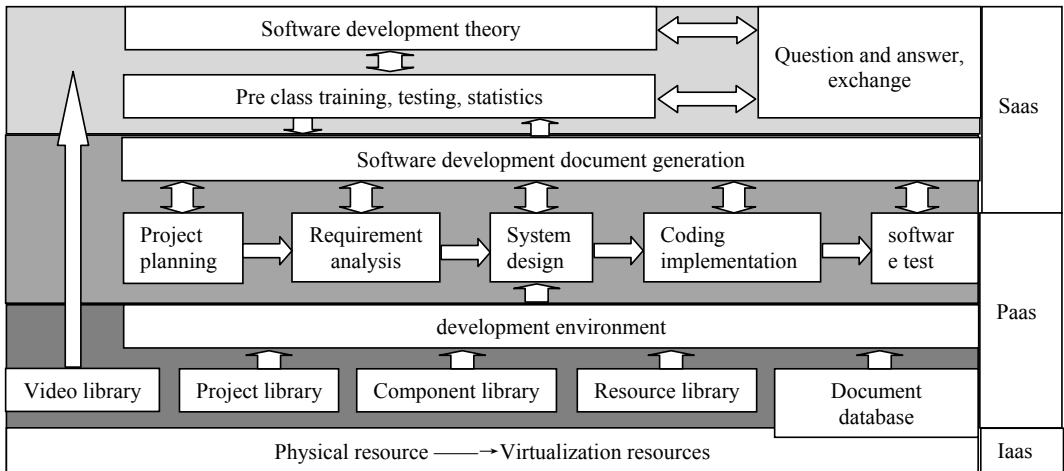


Fig.3."Flipped classroom" cloud computing platform architecture diagram

Cloud computing network teaching platform is not only conducive to the realization of "flipped classroom" good teaching effect, to provide convenience for teachers and students, but also can reduce the school fixed assets investment and operating costs, reduce the burden on students. As shown in Figure 3, the software engineering of flipping the classroom teaching of cloud computing platform in accordance with the service types can be divided into three layers: the first layer is the infrastructure service layer (IaaS), composed of computer, memory, network infrastructure, database and other physical resources, and will be integrated into the same type of physical resource pool of computing resources and storage resources pool, pool, cyber source database resource pool, software resource pool of virtualized resources, hardware devices and other infrastructure package services for users, is the basis of cloud computing service system, through the virtual resource pool for the "flipped classroom" teaching platform provides cloud computing, storage, network on-demand dynamic cloud infrastructure services, the biggest feature is to allow users to dynamically apply or release nodes, by the use of charging; the second layer is the software development platform of online service layer (PaaS), built on the infrastructure layer, the level of abstraction of resources further, using a specific programming environment, follow the specific programming model, responsible for resource dynamic expansion and fault management, support, support member, development tools support, literature support for software project development process, provides the interface for construction the software development of virtual resources and teaching resources such as video resources, through the distributed computing environment and distributed storage environment with massive resources system, database system, massive information system services, online through the online cloud development platform will be the operating system, application development environment and platform level products to provide Web services to teachers and students, convenient for teachers on the same platform of teaching resources design, is convenient for students to real project training on the same platform, there are Conducive to the full utilization of teachers and students of teaching resources; the third layer teaching resources application service layer (SaaS) is, at the top level is between teachers and students with cloud computing service system interface and some specific application software functions are encapsulated into services, such as direct for teachers and students to provide documentation generation, software testing, video resources play, class before training and testing, teachers and students, between students online communication, student management software application service. Teachers and students are not subject to time and

space constraints, the use of PC computers, 3G mobile phones or other mobile devices to access the cloud end, cloud computing technology system to accept the vast amount of services provided.

Flip classroom cloud computing platform can choose public cloud, but also choose the private cloud. The public cloud platform can provide the common operation environment and the network teaching function, the school does not need to construct the network teaching platform independently, can reduce the construction cost. However, public cloud platform generally does not open source code to users. Users can not upload the teaching resources to the cloud platform in the way of compiling code, which limits the personality of the teaching platform and the software reuse. Therefore, the best choice of public and private cloud combination of mixing clouds build software engineering "flipped classroom" cloud computing platform, namely through the public cloud model reduce school IT infrastructure investment costs and through private cloud model to ensure personalized platform into full play.

### **3. Software engineering "flipped classroom" teaching platform main function module**

The function module of the "flipped classroom" cloud computing teaching platform mainly includes the development module of classroom software, the theoretical learning module, the operation management module and the student evaluation module.

#### **3.1 Software development module**

"Flipped classroom" by traditional classroom "teaching before practice" into "the first post practice", weakening "education", emphasizing "learning", highlight the "practice", the "learning" for students by watching the video of the self-study software development theory knowledge, "practice" train for training in software project development, and "practice" accounted for learning the proportion of time greatly increased, students pay more attention to the training, to enhance students' learning autonomy, degrees of freedom increases. Therefore, in order to achieve a good teaching effect, the students "learning" content, "practice" the environment put forward higher requirements. "Flipped classroom" cloud computing platform should meet the real experimental training base of the "real enterprise project", "real enterprise management" and "real corporate environmental standards" three "real" requirements. Software module is the core module of the platform of teaching software engineering "flipped classroom" cloud computing, including project planning, requirement analysis, system design, coding, testing, etc. the project development process and display software products, each process should be can generate the corresponding project document. In the classroom, through the guidance of teachers, students landing to the school's cloud computing platform for real software project development and training, and can get the teacher's timely guidance, dynamic monitoring. Students on the same platform, both groups of research and development, but also can be a separate thinking, and with the teacher to achieve one to one face to face communication. Through the depth of cooperation between colleges and enterprises school on the cloud platform established real software project base, case base, to provide students with the real development projects, or cooperation of school and enterprise software development to the cloud platform, students under the unified arrangement of the enterprise project manager in enterprise real project development, play a role in "work integrated learning, internship".

#### **3.2 Theoretical learning module**

"Flipped classroom" of three key steps: watch the video before learning, discussion and questions; watching the video learning according to seek answers to questions; application and problem solving learning problem in depth to explore. In the "flipped classroom", students mainly through watching teachers to provide teaching video to obtain the theory knowledge, through the pre class for training basic digest the knowledge, and both teachers and students need timely understanding of the students theoretical knowledge to grasp the situation. Can be seen that cloud computing theory learning modules from the front of the video teaching, lesson before training, class test statistics,

communication between teachers and students, such as sub module composition. Teaching video sub module with video play, fast forward, slow release, replay, rewind, pause function for students' self paced, autonomous learning. The visual effect, interactivity and time length of the teaching video have important influence on the students' learning effect. Not only video content to coincide with the teaching target and the content of classroom training, but also to clear, concise, and put in place to explain new knowledge, the key points of theme, the explanation of the knowledge points to shallow to deep, have logic, levels, progressive, at the same time, pay attention to the teaching rhythm, selected examples, interactive strategy. In before each teaching need to set question to students with questions to watch the video in which to look for the answer. Each knowledge point presentation ends, the students through class training module in a timely manner simple training, knowledge application and research problems. Teachers and students through class testing and statistics module to test the student's theory of knowledge mastery, timely feedback to the teachers and students, teachers can quickly understand the overall situation of the students, is convenient in class for explanation. In the course of the whole course of study, students can communicate through the exchange between teachers and students, in a timely manner to answer questions about the students.

### **3.3 Operation management module**

Cloud computing is "flipped classroom" software development training and in front of the class theory of learning support and protection module and operation management module, located in the cloud computing teaching platform in the application service layer (SaaS), through the application specific software package into service, mainly including: project management, student management, resource management sub module.

#### *3.3.1 Project management sub module*

Teachers monitor and check the whole process and the results of the project development and training through the project management module. Nine knowledge areas of project management module mainly related to the project integration management, scope management, quality management, cost management, time management, resource management, risk management, contract management, communication management and so on. Among them, quality management, cost management, time management for the core areas of project management, has become the focus of the flipped classroom teacher's monitoring.

#### *3.3.2 Student management module*

Student management module can be further divided into classroom student management module and extra-curricular student management module. "Flipped classroom" later, the knowledge based theory of learning by the students in the course of independent watch video, students' Extracurricular self-study effect directly affect the classroom training, teachers can not at the scene to monitor. Therefore, effective extracurricular learning control is "flipped classroom" success is an important factor.

#### *3.3.3 Resource management sub module*

"Software engineering" flipped classroom "required resources mainly include the theory of learning before class video resources and classroom software development resources," resource quality "itself largely determines the effect of students' learning. In front of the class theory study of video resources must be highly correlated with the class software development training resources, speaker teachers can personally recording or video resource database is established using a network of outstanding open educational resources. Self recording teaching video is easy to keep in line with the classroom training and teaching goals, and even for different versions of the teaching of different versions of the teaching video, students' self effect is easy to guarantee. If we use the existing network resources, we can save manpower and material resources, improve the utilization of resources, but it is difficult to ensure the consistency of video content and classroom training.



### 3.4 Student evaluation module

Student evaluation is not only for students learning process and effect evaluation and examination of teaching process and effect, and is of the flipped classroom teaching mode and cloud computing platform effectiveness test, teachers and students together to improve and efforts on the basis of the. The student evaluation module includes student learning process evaluation module and learning evaluation module. Student course evaluation module by software development the document generation, before class to watch video, class before training and testing output sub module, student evaluation module by software products display, training report, training performance, theoretical score and total score generation module group into. Project document output module can reflect the students training process quality, is students' professional knowledge, technical ability, comprehensive ability and professional quality of visual display, is the focus of teacher classroom control; before class video viewing, class before training and testing output sub module can reflect students' self control, self-learning process and the students in the class of theoretical knowledge, before class cloud platform control key. Theoretical results are pre course test result shows, the software product is showing results of students to develop real software projects, training report is the classroom training of students in the process of summary and improve the show, the training performance is the overall performance of the students in the classroom training, the total score is on students' learning, teaching process and result evaluation.

## 4. Summary

"Flip the classroom" from the teachers "teaching" to pay attention to the students "learning" change, is a "buffet" type of learning model, Bill Gates known as "the future of the foreseeable future of education". "Flipped classroom" flexibility, detection, with students as the center, personalized learning, teacher-student interaction, by the favor of the majority of students, classroom discussion and practice of "assimilate" is to reach the root of the flipped classroom teaching effect. Software engineering "flipped classroom" the cloud is calculated teaching platform to Iaas, PaaS, SaaS as the main service model, composed of software development, learning theory, operation management, student evaluation, and functional modules, mainly distributed in PaaS and SaaS layer. Cloud computing technology for software engineering implementation of flipping the classroom teaching mode has created conditions and is not limited by time and space, students can in the "cloud" autonomous learning theory, discussing the problem, software development, experience true enterprise working environment, teachers can be in the "cloud" in the development of teaching resources, teaching activities and to the student management, teachers and students can be one to one, one to many, many to many communication in the "cloud". Lots of programs running in the cloud, with low requirements for terminal equipment, can reduce the school laboratory of fixed assets investment and operation cost, reduce the burden of students, teachers and students from start to finish with a cloud platform can reduce the use of in the process of switching costs, improve the efficiency of work and study.

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## Protection of Consumer Rights and Interests in “Overseas Purchasing Service”

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**Keywords:** Overseas Purchasing Service Consumers Protection of Rights and Interests

**Abstract.** More and more people have turned to overseas purchasing agents through internet to buy high quality goods at low prices. However, with the rapid development of the new industry, drawbacks of overseas purchasing service have emerged and have become increasingly prominent. In all links of overseas purchasing service, such as purchase, transport and after sale service, the rights and interests of consumers are not rigorously protected currently and a large amount of disputes arisen from overseas purchasing service. The writer will focus on perfection of disputes resolution mechanism and help to promote best protection of consumer rights and interests in overseas purchasing service starting from establishing online disputes resolution mechanism and straightening out relevant issues in resolution of judicial disputes.

### 1. Overseas purchasing service creates a new trend

In 2013, Chinese overseas purchases through overseas purchasing agents totaled about 74.4 billion yuan, a 30 percent jump from the previous year and the total is expected to exceed 100 billion yuan in 2014, according to a report released by Chinese Industry Research Network (ChinaIRN).<sup>[1]</sup> Overseas purchasing service has become a popular choice for customers when purchasing. Actually, “overseas purchasing service” is not a definitely ascertained terminology but a new trading model. Overseas purchasing service refers to behavior of overseas purchasing agents who are entrusted by consumers to purchase commodities abroad in their name or consumers’ name and obtain proper remuneration from consumers.<sup>[2]</sup> In light of status of purchasing agents, overseas purchasing service is divided into acquaintance purchasing service and professional individual purchasing service. Acquaintance purchasing service refers to consumers’ behavior of entrusting relatives or friends to purchase commodities while abroad on business or in their travels. Business nature of acquaintance purchasing service is non-profit making. Professional individual purchasing service refers to profit-making activities via small individual purchasing online store established by purchasing agents, whose full time job is to purchase commodities abroad for customers, on the professional network platform or integrated online shopping business platform which facilitate Customer to Customer model (C2C), such as “Tmall Global” of taobao and individual purchasing online store. Professional individual purchasing service is major model of overseas purchasing service, since acquaintance purchasing service is not wide-ranging.

Four subjects, including consumers, purchasing agents, online shopping business platform and overseas sellers, are involved in overseas purchasing service, of which legal relation is complex and subjects are transnational. At the online store established by purchasing agents on online shopping business platform, consumers could browse images and descriptions of products and place their order. What is special about overseas purchasing service is that most online stores do not have commodities in stock. When an order is placed, commodities are not actually owned by the purchasing agents. After consumers placed their orders and made a payment, purchasing agents make purchases at stores abroad as requested by consumers, mail packages to consumers and

receive payment from consumers via third-party online payment platform after consumers received goods and confirmed receipt of ordered goods.

## **2. Problems with overseas purchasing service**

### **2.1 Information asymmetry between purchasing agents and consumers in online shopping**

Few pictures and written descriptions of products posted by purchasing agents on website only give consumers a basic understanding of the products in online shopping and it is purchasing agents who first have contact with products and know the price, which exacerbates information imbalance between purchasing agents and consumers. A web search for "purchasing agent" at taobao, produces more than 700,000 shops, all of which provide overseas purchasing service and guarantee authenticity of products. We don't know whether these online stores sell quality products or not and it is possible for purchasing agents to give false information or post false advertisements. Consumers could make a judgment about business reputation of online store by making use of credit rating which is formed by historical evaluations available on online shopping business platform, including comments and complaints from other consumers, but it is quite easy to falsify credit rating as click farming is common among purchasing agents. Most purchasing agents make a declaration of non-acceptance of returning or replacing goods within 7 days upon receipt without reason on the homepage of online store because purchasing agents are entrusted by consumers to purchase commodities, which is unfair for consumers and infringes consumers' statutory rights endowed by Law of the People's Republic of China on the Protection of Consumer Rights and Interests.

### **2.2 Assumption of responsibility during transport and customs duties**

Purchasing agents usually mail commodities from abroad to domestic consignees, who redistribute the commodities to the customers. Commodities are delivered to consumers through indirect mailing, which possibly leads to a delay in transportation of goods. Furthermore, it is difficult to assign responsibility to consumers or purchasing agents in case of commodity damages or loss during transport. In addition, packages need to clear customs due to particularity of overseas purchasing service. According to article 45 of Regulations of the People's Republic of China on Import and Export Duties, if goods of a single consignment on which the duties are estimated to be not more than RMB 50 yuan, it shall be exempted from duties. According to relevant provisions of General Customs Administration, luggage and articles for personal use carried by inward-bound resident passengers that are obtained overseas, with a total value of no more than RMB 5,000, shall be released by customs without levying duties. In order to pay less duties or evade customs duties, purchasing agents usually mail commodities to china as personal packages, like ants pinching giant food to ants nest, so commodities could be inspected by customs and get taxed. In normal case, purchasing agents impose taxes on consumers, which results in instability of equivalent payment for consumers in online shopping. What' more, improper behavior of purchasing agents put them at risk of being guilty of smuggling, which makes it harder to protect consumer rights and interests.

### **2.3 After sale service**

In practice, the contracts between consumers and purchasing agents are regarded as entrustment contracts. Purchasing agents are entrusted by consumers to purchase items from overseas sellers in their own name, of which legal effects are assigned to purchasing agents directly and consumers indirectly, so legal acts of purchasing agents fall into the category of indirect agency.<sup>[3]</sup> Problem with the perspective is that as purchasing agents fulfill their obligations by completing purchase, consumers have to make a compensation claim against overseas sellers for product issue in accordance with purchase and sale contract, during which geographic limitations and high cost of transportation to and from foreign countries make it harder to protect consumer rights and interests. Moreover, even if purchasing agents allow consumers to test if products were genuine or counterfeit

at a franchised store and guarantee to pay damages ten times the price of counterfeit, it is still difficult for consumers to tell whether or not products are genuine. For commodities purchased overseas, franchised stores will actually not provide after sale service to customers and genuine products test is not part of the service, which means purchasing agents do not bear any burden of responsibility for their solemn promise.

### **3. Perfection of disputes resolution mechanism**

#### **3.1 Establish online disputes resolution mechanism**

Most consumers purchase commodities in small quantities. When there is a dispute, there is no more cost effective means for resolving the dispute than consultation between consumers and overseas purchasing agents. However, it is unrealistic for consumers to launch a consultation with purchasing agents face to face as relevant subjects are transnational in overseas purchasing service. Establishment of online disputes resolution mechanism with the help of internet technology could solve the above problem effectively. Online dispute resolution (ODR) is a branch of alternative dispute resolution (ADR) and resolves disputes through third-party online platform.<sup>[4]</sup> Whole process of disputes resolution is completed online and most online shopping business platforms mediate between consumers and purchasing agents as a neutral third party for settlement of disputes. In China, taobao has established online dispute resolution mechanism with taobao employees as subjects. Consumers and purchasing agents could submit their dispute to taobao employees, provide evidence based on their points of view through platform, and taobao employees make an award. Although the award of the mechanism, in which shopping business platforms mediate between parties as a neutral third party and facilitate the resolution of disputes, is not binding and enforceable, the mechanism wins the graces of many consumers due to its flexibility and time-saving benefits.

#### **3.2 Straighten out relevant issues in resolution of judicial disputes.**

##### *3.2.1 Adopt principle of consumers' domicile jurisdiction*

Purchasing agents are entrusted by consumers to enter into a contract with overseas sellers on behalf of consumers, which falls into the category of undisclosed agency. According to article 403<sup>[5]</sup> of Contract Law of the People's Republic of China, legal effects of undisclosed agency are assigned to consumers, so the contract is actually made between consumers and overseas sellers, which consumers have rights to bring a claim against overseas sellers directly. As overseas sellers are abroad, disputes arise over whether or not courts in China have jurisdiction over the case. In practice, some courts refuse to accept the case and believe that they do not have jurisdiction over the case as court of the place where plaintiff is domiciled because defendant is domiciled abroad. Even if courts accept the case, disorder of application of laws in judicial practice is detrimental to protection of consumer rights and interests.

Provision concerning jurisdiction over foreign-related cases is mainly found in article 265<sup>[6]</sup> of Civil Procedure Law of the People's Republic of China. According to article 265 of Civil Procedure Law of the People's Republic of China, if the contract is performed and consumers have received products, consumers could bring a lawsuit in domestic courts with place where the contract is performed, or where the subject matter of the action is as connection points, and domestic courts shall accept the case. If the contract has not been performed, the place of performance agreed upon under a contract, which refers to place where consumers are domiciled, could be regarded broadly as place where the contract is performed. As consumer is the very center of transactions in overseas purchasing service while defendants have no domicile in china, if the place where defendants are domiciled abroad is taken as the center, it is detrimental to protection of consumer rights and interests. In order to solve jurisdiction dilemma consumers face when consumers safeguard their rights and ensure realization of consumer litigation rights, it is advised to adopt principle of consumers' domicile jurisdiction in judicial practice.<sup>[7]</sup>

### *3.2.2 Endow consumers with litigation rights against purchasing agents*

In reality, disputes arise over legal status of purchasing agents. As purchasing agents provide consumers with labor service of purchasing commodities and mailing commodities to consumers, some scholars believe that what purchasing agents sell to consumers are labor services rather than commodities.<sup>[8]</sup> Scholars who held the above view also believe that purchasing agents are similar to intermediary during the whole process of overseas purchasing service. Purchasing agents' obligations are to provide consumers with labor service and shall not bear any responsibility for after sale service. The perspective transfers risk that shall be taken by purchasing agents to overseas sellers and consumers, which increases the burden of safeguarding rights for consumers. In respect of legal status of purchasing agents, we shall capture the profit-seeking essence of purchasing agents during the whole process of overseas purchasing service and it is more appropriate to identify purchasing agents as distributors in legal sense from the perspective of protecting consumer rights and interests.

According to principle of relativity of purchase and sale contract, consumers could only claim compensation for product issue from overseas sellers. Litigation rights against purchasing agents are based on entrustment contracts. Furthermore, litigation rights are premised on fault of purchasing agents. After purchasing agents are identified as distributors, purchasing agents shall bear responsibility for commodities and consumers shall be endowed with litigation rights against purchasing agents. As purchasing agents are in contact with consumers as well as overseas sellers and have closest relationship with commodities simultaneously, a breakthrough shall be made in contract relativity and consumers shall be endowed with litigation rights against purchasing agents, which has positive significance in protection of consumer rights and interests. Consequently, when safeguarding rights, consumers could choose between overseas sellers and purchasing agents and bring a lawsuit against those who can help to realize consumer rights and interests to the greatest extent possible after taking into account various factors.

### *3.2.3 Responsibility taken by online shopping business platform*

As online shopping business platform provides purchasing agents with platform allowing purchasing agents to offer overseas purchasing service and consumers conduct transactions with purchasing agents via online shopping business platform, online shopping business platform shall bear responsibility for consumers. Online shopping business platform shall, from the perspective of construction of basic system, establish consumer rights and interests guarantee system, set strict restrictions for purchasing agents on entry into overseas purchasing service and establish standardized credit rating system of purchasing online store. Article 44<sup>[9]</sup> of Law of the People's Republic of China on the Protection of Consumer Rights and Interests stipulates responsibility taken by online transaction platforms, but the responsibility only refers to liability for compensation ranking second when online shopping business platform is at fault, which is far from enough to protect consumer rights and interests in overseas purchasing service.

If consumers have disputes with purchasing agents over quality of commodities, especially counterfeits made or sold by purchasing agents, it indicates that online shopping business platform fails to fulfill basic obligations of pre-examining purchasing agents, which causes loss to consumers when consumers do online shopping via online shopping business platform. If consumers bring lawsuits against purchasing agents, consumers shall be endowed with rights of requesting online shopping business platform to bear joint and several liability as jointly and severally liable party, which provides better protection of rights and interests to consumers.

The above analysis is intended to complete system design of consumer rights and interests protection starting from establishing online disputes resolution mechanism and straightening out relevant issues in resolution of judicial disputes. Protection of consumer rights and interests are truly realized only if theoretical discussions apply to provisions of law. In the current China laws, realization of full protection for consumers are mainly centering around Law of the People's Republic of China on the Protection of Consumer Rights and Interests, but cross-border consumption in the form of overseas purchasing service is not specified in Law of the People's

Republic of China on the Protection of Consumer Rights and Interests. Provisions of fundamental rights in Law of the People's Republic of China on the Protection of Consumer Rights and Interests could apply to protection of consumer rights and interests in overseas purchasing service, so purchasing agents shall be requested to fully disclose relevant information, such as information about themselves, commodity quality and price, in order to guarantee consumers' rights to information. Furthermore, quality assurance of commodities sold by purchasing agents shall be guaranteed in order to ensure personal security of consumers. Moreover, although commodities purchased by overseas purchasing agents have certain particularity, purchasing agents shall promise to guarantee consumers' rights of returning or replacing goods within 7 days without reason in order to guarantee consumers' rights of transaction on the basis of equality. In addition, current law of the People's Republic of China on the Protection of Consumer Rights and Interests fails to properly regulate overseas purchasing service due to its complex features, such as cross-border commodity purchase and multi-party participation.

In consequence, our country shall legislate specially to regulate relevant issues of overseas purchasing service, especially content mentioned above which shall be studied with emphasis and regulated effectively. If cost of legislation of overseas purchasing service is pretty high, it is advised to revise current law of the People's Republic of China on the Protection of Consumer Rights and Interests and consumer rights and interests in overseas purchasing service shall be protect in a dedicated chapter. Better protection of consumer rights and interests in overseas purchasing service are realized only if protections apply to provisions of law.

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## Interactive Research on Music Recommender System

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**Keywords:** Recommender system; Interactive design; User interface; Visualization; Explanatory

**Abstract.** The accuracy of music recommender system mainly relies on the underlying algorithms, and the ultimate user experience of the system correlates with the interactive design of the user interface as well. This paper aims at concluding and analyzing the interactivity of the music recommender system from the visualization of recommended processes aspect and the explanatory of the recommendations aspect. And it put forwards the possible research direction for the future study.

### 1. Introduction

Recommender system is a new information retrieval method that shifts from user information-searching to system information-recommending. Recommender system can generate information for users to meet their individual needs according to the different characteristics of different users, such as hobbies, social relations, previous behavior in Internet etc. Recommender system has been developed as an effective solution to tackle the overload information and has been a focus of research within AI community for the recent 20 years [10].

The initial study of the recommender system began with the introduction of the GroupLens system [8] by the University of Minnesota in 1994. In the field of music, the first application of the recommender system is Ringo system in 1995. After that, many famous music products applying the recommender system appeared in the home and abroad, such as Pandora, Last.fm, Song Taste, Xiami, douban.fm, NetEase Music, etc.

While there is a lot of research on the development and innovation of the accuracy of recommender system algorithms, there is little focusing on interaction design for recommender systems, which users can operate with directly. The underlying algorithms and the interaction of the surface constitute the complete experience process of music recommender system. Studying the interactivity plays key role in the promotion of user satisfaction as well.

### 2. Data model of music recommender system

At the data level, the recommender system can be divided into 2 parts: (1) The input data, which includes item profiles, user profiles and reviews. (2) The output data, which includes recommended items list and recommended reasons. The users' reviews of music resources usually includes 2 categories [9]: (1) Explicit reviews, such as ratings, comments, etc. (2) Implicit reviews, such as time of view and listening etc. The recommender system obtains this important part of input data through the user interface, which carries all the information interaction between the users and the system. Therefore, this part of the interface and interaction design, not only directly affect the user experience



impressions of the recommender system, but also in relation to the quantity and accuracy of user profiles and reviews data obtained by the system.

### 3. Interactive research on music recommender system

The method that music recommender system generates playlist automatically is more convenient and efficient, but it weakens the sense of the user control towards the outcome and decreases the entertainment during the course of using [5]. The users' confidence in the items generated by the system will diminish as the drop of the transparency of this system.

Therefore, beyond the accuracy of recommender system algorithms, researchers have begun to explore the interaction design of user interface for music recommender systems, which is directly related to the end users. Basically, it can be divided into 2 categories: (1) Visualization of recommended processes (2) Explanatory of the recommendations.

#### 3.1 Visualization of recommended processes

The recommender system obtains the users' explicit and implicit evaluations of the music resources data through the user interface. There are some researchers, therefore, attempting to allow the users to control a variety of parameters that recommender system algorithms needs in a visual way. PeerChooser [7] obtains users' explicit input data by allowing users to control the locations of various icons to set parameters in its user interface, which improves users' sense of control of the system and increases the number of explicit evaluation data the system obtains at the same time.

TasteWeights is a visual interactive music recommender system [2]. The system has a novel interactive interface which serves to explain the recommendation process and elicit preferences from the end users. The results of the study suggested that since the interface provided a mechanism for the interpretation of the recommendations and was available to obtain the users' profile data in real time, TasteWeights system increased the users' satisfaction and the relevance of predicted contents.

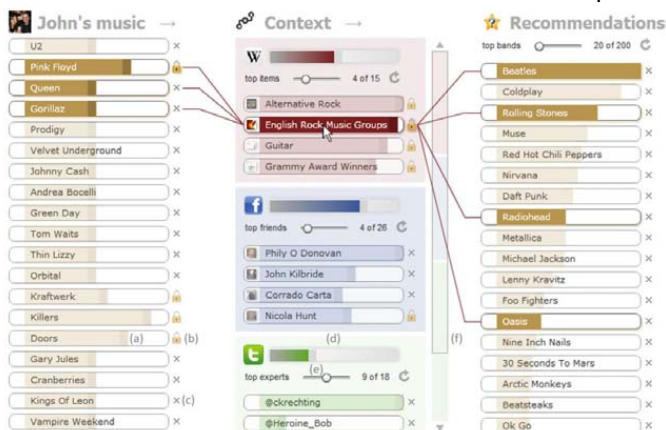


Fig.1.Screenshot of TasteWeights

TasteWeights music recommender system is organized into 3 distinct layers which represents the 3 steps of the recommended process: (1) The leftmost layer contains the user's profile. In Figure 1, this area displays the user's "liked" music items in Facebook. (2) The central layer contains context information which consists of different sources that can be used to produce recommendations. In Figure 1, the data is sourced from Wikipedia, Facebook and Twitter. (3) The rightmost layer contains the recommendations ranked by relevance. Edges are displayed to illustrate the provenance of each item.

The interactivity of TasteWeights is reflected in that users can control the weight of different items via interactive slider-weights and other UI components. And other relevant items as well as the recommendations will change accordingly in real time.

This kind of visual and interactive interface, which allows users to see the feedback caused by their operation at real time, make the recommendations more explanatory. As a result, users' acceptance of recommendations increases accordingly.

SmallWorlds [3] is an application based on Facebook API. It is a visual interactive recommender system which can generate recommendations in a variety of domains including music. In Figure 2, Smallworlds' interface layout from left to right is divided into 5 layers: (1) Layer 1 contains the active user's node. (2) Layer 2 contains the active user's profile items. (3) Layer 3 contains the friends who have items in common with the active user in layer 1. (4) Layer 4 contains the items that are not in the active user's profile but are liked by friends in layer 3, namely, the spare playlist. (5) Layer 5 contains friends who have no items in common with the active user, but have some items from layer 4 in their profile.

The nodes in this interface are connected by a line to indicate their correlation, and the size of each node as well as the distance from the boundary represent its weight. The active user can adjust the weight by dragging the node in an appropriate range to adjust the user's profile dynamically.

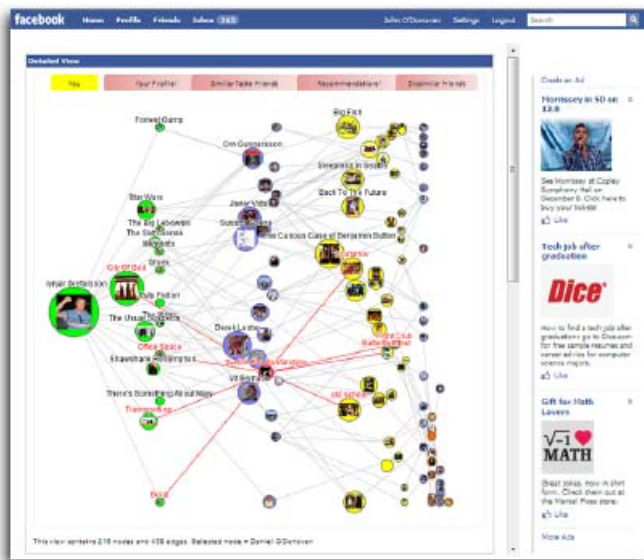


Fig.2.Screenshot of SmallWords

At the same time, it should be noted that even though visualization can improve the users' sense of control, whether the increased input operations during the recommended process would have positive or negative effect on users? Kirsten's research [11] found that users did not mind to provide more input in order to receive more precise recommendations. When the system generate items that are "too simple" or "inaccurate", the users came to believe that it was due to too little input. The finding means that if the final recommendations are reasonable, the increased input operations during the process of visualization are accepted by users.

### 3.2 Explanatory of the recommendations

Herlocker's study [4] of recommendation explanations is a prominent work in this field. Herlocker called the existing recommender system "black box", which did not provide the transparency of the working principle, and constructed an explanatory interface for the recommender system based on

users' cognitive concept of the workflow of the recommender system, which called "white box". Herlocker et al. then evaluated what type of explanation was more convincing to the users: They presented 21 different recommendation interfaces to users, including 2 control groups that without explanation. They required users to rate their acceptance of the recommendations. It is worth noting that specific recommendations were not shown in each interface, which can avoid the interference of the users' preference for the recommended items and researchers could merely focus on the impact of explanation. The study indicated that rating histograms was the most persuasive way to explain the recommendations, and that explanatory interface was considered to be a valuable component of the recommender system. The explanation of the recommendations promotes the user acceptance of this system. The results of Middleton's study [6] were consistent with that of Herlocker's.

Bilgic [1] argued that the validity of explanation could be evaluated from 2 dimensions, namely, promotion and satisfaction. He considered that a good explanation should help users to make an accurate judgment on the quality of the recommendations. And he put forward 3 different explanation methods in the study: (1) Keyword Style Explanation, which was mainly for the recommender system based on content-based algorithms. It analyzed the content features of the recommendations, extracted the features that best matched with the user profile as the key words to explain. (2) Neighbor Style Explanation, which was mainly for the recommender system based on collaborative filtering algorithms, compiles a chart that shows how the similar users rated the recommended items. (3) Influence Style Explanation, presented users a table of those training examples, which the user has already rated, that had the most impact on the system's decision to recommend a given item.

Bilgic's study shown that Neighbor Style Explanation might lead to users' high evaluations of the quality of recommendations, resulting in their distrust and stop using of the system. Keyword Style Explanation and Influence Style Explanation, however, are effective for users to make accurate judgments.

#### **4. Summary**

This paper summarizes and analyzes the existing researches concerning the interactivity of the music recommender system from the visualization of recommended processes aspect and the explanatory of the recommendations aspect. The evaluations of music recommender system were divided into 2 dimensions, namely, accuracy and transparency. The accuracy of the system was affected by the recommendation algorithms, and the transparency was affected by the interaction. The users had more control over the system by means of visualization of recommended processes and explanatory of the recommendations, which improved the transparency of the system. The existing researches have proved that interactivity could promote the users' satisfaction to the music recommender system.

However, there are still shortcomings in studying the visualization of recommended processes:

(1) There are too many parameters as well as too much mapping relationship between them displaying on the interface, which could result in the complexity and the lack of beauty of the interface. Further, it could affect the learnability of the system, which may increase the users' cognitive burden of the system to some certain extent.

(2) The researches above are based on the PC and Web interface design. There is still a research gap of studying on the small screen of the mobile terminal. Mobile is the platform that users more often employ the music products currently. Due to the variety of the screen sizes and the interactive modes of the mobile devices, the visualization methods of the researches above are not applicable to the mobile devices.

Therefore, the future study concerning the music recommender system in terms of the interactive aspect is suggested to be focused on the learnability of the visual interface and the interactivity on the mobile devices.

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# The Design and Implementation of Online Management System for Shoe Physical Store

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**Keywords:** E-Commerce; Website design; Shoe store sales.

**Abstract.** With the constant development and popularization of network technology, e-commerce has been increasingly favored by enterprises as an emerging market mode. At the same time, more and more consumers, especially the young consumers, regard the online shopping as a major consumption pattern. Online shopping is not only a kind of fashionable consumption pattern, but also provides a more convenient and efficient marketing channel for the operator. Meanwhile, it has greatly reduced the logistics cost and payment cost for consumers. It is changing not only people's way of life gradually, but also our economic structure. This design attempts to develop a set of online shopping website which targets at the shoes via the network technology, so as to achieve sales in the way that consumers register online first and then buy the shoes. At the same time, it realizes the common functions of online shopping network and strives to achieve the novel interface, easy operation and rich function<sup>[1]</sup>.

## 1. Introduction

As one of the most important marketing methods and means in e-commerce, online shopping is also changing the business model of merchants. Large quantities of online shopping websites emerge at the right moment as well and enjoy a rapid development, such as Taobao, Jingdong, The Store and other large comprehensive shopping malls. In addition, the shopping websites of JMEI, The Blood and Iron Military Products and Suning Appliance have also emerged which aim at the special merchandise category. Numerous businesses have changed their previous practice that only focus on the construction of the physical shop, and put more money and energy into the online shopping. It can be said that online shopping is occupying an increasingly prominent position in the development of enterprises and has become a major means of profit for many businesses<sup>[2]</sup>.

## 2. The overall scheme design of the system

The detailed descriptions of the specific function and performance requirements of each module are as follows.

### 2.1 The main function of the foreground user subsystem:

(One) The function of user registration: the module is the user management module which targets at the registration of system users. After entering the shopping website of selling shoes online, the users can register the personal information (user name, password, real name, gender, telephone, e-mail, shipping address, postcode and so on) and then become the registered users (namely, the members), so as to facilitate their purchase of shoes in the future.

(Two) The function of user login: this module is the user management module aimed at the user login. After getting access to the website, the users can view and modify the personal information.

They can also browse all the information of shoes on the website, but if they need to buy the shoes, they have to log in first and then check their shopping cart, namely, check all the shoes information in the shopping cart. Otherwise, the users can not carry out the transactions of shoes sales.

(Three) The function of shopping cart: this module mainly realizes the function of purchasing shoes by the legitimate users on the website. When visitors (those who do not log in the system or register the system) visit the website, they can only browse all kinds of information about the shoes on the website, but they can not buy the shoes. When the user has registered as a system user and successfully logged in, he can have a shopping cart for purchasing goods. After logging in the system, the user can not only browse the shoes information on the website, but also have his own shopping cart in which he can put his favorite shoes at any time on the website. After buying the shoes, the user can also view his cart, and then modify the number of the shoes purchased in the shopping cart, or delete some shoes that he do not want to buy. After that, he should proceed to checkout, and then the order will be generated. The whole process of using shopping cart to buy the shoes is very simple and convenient for users.

(Four) The function of order management: this module is responsible for checking the details of the order. After the user submits the list of shoes in the shopping cart, the order will be generated by the module. Through this module, the user can also check all the previous order records. Besides, the user can have the right of using the module only after logging in.

(Five) The function of user message: this module is responsible for the service of user message. When the user has advice on the website, he can pass the advice to the administrator through the message. Besides, the user can have the right of using the module only after logging in [3].

## **2.2 The background management system is mainly to help the administrator with the management of the normal operation of the system and the marketing. The administrator can only carry out maintenance and management of the entire system after successfully logging in. The specific functions are described as follows:**

(One) The function of inventory management: it mainly refers to the management of shoes information displayed on the foreground by the administrator, including the information inquiry, deletion and modification function of the shoes and the check of stockout notice.

(Two) The function of stock management: it mainly refers to the supplementation and purchase inquiry of the goods by the administrator. The supplementation includes the supplementation of the new goods as well as the old goods (already out of stock).

## **3. The software design of lower computer**

Database is the engine used to store data by the application system, which is also an important component of the application system. If the structure of the database is reasonable, it can improve the operation efficiency greatly and shorten the development time. The basic design process is as follows:

(One) Analysis of the user demand. The analysis of user demand can determine all the information involved in the system and the information that the system wants to save eventually. By communicating with the customer constantly and conducting the relevant investigation and analysis, it can determine the user's requirements and the structure information of data.

(Two) The construction of conceptual model. The corresponding virtual model can be established by the modeling tool according to the structure information of the data. Generally speaking, the conceptual model corresponds to the entity information and the handling of conceptual model corresponds to all kinds of operations and switches. By establishing the diagram of concept model, we can clearly determine the direction and the deepening process of the data.

After finishing defining a variety of functions, we should begin to establish all kinds of tables involved in the system in the database. The database is an engine used by the system to store data, which occupies the core position. The information display and processing of the foreground and the

data maintenance of the background are all based on the database.

#### **4. The user interface design of the system graph**

It is a convenient and efficient way of using the Mscmm control in VB to conduct serial communication. It reads data mainly from the serial port by using the Input method of the control and writes data to the serial port by using the Output method. During the process of automation, to read and write data from the serial port is the most basic work. In order to understand the situation of data collection more conveniently and in real time, we assign the data read from SCM to the array and then draw the waveform curve<sup>[5]</sup>.

#### **5. Conclusion**

Currently, the project has been completed basically and achieved the anticipated target, but it just completes the main functions of some large mature shopping websites. Hereafter, it should try to achieve some features constantly, meet the user demand and strive to make the system into a mature commercial application. In addition, the project is only an exploration and implementation of the future development of electronic shopping. Therefore, the main work of the next stage should focus on the following two aspects:

1. Function issue: in the follow-up development stage, it should improve each function module gradually and achieve the commodity grade by customers. Meanwhile, it should also improve the background right management module, realize the real-time recording of the operation of the administrator and add the function of order tracking and so on.

2. Performance issue: it should optimize the table results, add the index function and improve the retrieval efficiency. Besides, it should also optimize the relevant query search statement, improve the efficiency of order execution and reduce the consumption of system resources.

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# Research on the Teaching Mode of Flipped Classroom in Higher Vocational College Based on SPOC

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**Keywords:** MOOC; SPOC; Flipped classroom; Teaching mode.

**Abstract.** SPOC is a new type of online learning mode after the rapid development of MOOC, in addition to inheriting the advantages of MOOC, it has anti-popularization, restriction of its own characteristics, which makes it to be carried on the depth of integration with the traditional classroom teaching and promote the reform of the teaching innovation. Focus on Higher Vocational Teaching and students' characteristics, it analyzes the problems existing in the flipped classroom teaching practice and advantages of SPOC flipped classroom teaching mode, designs the flipped classroom teaching mode based on SPOC, in order to apply SPOC for teaching reform in Higher Vocational Colleges for reference.

## 1. Introduction

《The education informatization ten year development plan (2011-2020)》 pointed out: emphasis on the integration of information technology and the depth of comprehensive education, giving full play to the unique advantages of modern information technology, significantly to enhance the students' autonomous learning ability in the information environment, teaching methods and education mode innovation continuously, promote informatization on the education reform in recent years fully revealed. In recent years, along with the development of mobile technology, wide application of networking technology and other emerging technologies, many new ways of learning have been spawned ,also many new education ideas. SPOC has developed rapidly, after MOOC in the world, has brought hitherto unknown impact to the traditional classroom teaching. Based on the SPOC to carry out flipped classroom teaching is turning a more feasible implementation flipped classroom teaching mode at present, it can make up for the inadequacy of the traditional classroom teaching, especially help the student to carry on the personalized autonomous learning. Because the students' self study ability is relatively weak, so that the teaching mode of the flipped classroom is suitable for the students in higher vocational colleges, and it is necessary to be built on the right platform.

## 2. The MOOC, SPOC, flipped classroom description

### 2.1 MOOC

MOOC is Massive Open Online Course acronym, translated into MU class. Its core is with the aid of network communication technology, releasing high-quality digital teaching resources on the open network education platform which has no restrictions of registered such as Udacity, Coursera publish there is no limit to the registered on the open network education platform such as Udacity, Coursera, for distribution in different parts of the world of learners learning and communication. Since 2012,



the MOOC got large-scale applications, mainly attributed to it broke the limit of teaching and learning time and space, make the teacher may have to the world and taught, from which the students can get the world famous. But MOOC course's enrollment rate is higher, trainees difference is big, MOOC platform is lack of the supervision of students' learning process, these factors cause the dropout rate is higher. MOOC teaching model may not be very suitable for higher vocational students [1].

## **2.2 SPOC**

SPOC (Small Private Online Course), namely, Small, Private, Online Course, for a few real registered students of education Course. Compared with the MOOC, number of trainees SPOC is less commonly, dozens to hundreds of people and the difference of trainees is not big, and generally students of the same school participate in [2]. Through periodic or non periodic offline communication, SPOC can make students have a consistent schedule. In addition, SPOC teachers with insight into all aspects of the students information such as watching micro class schedule, number, finishing the homework, test scores, etc., can teach students in accordance with their aptitude. So the SPOC is more suitable for higher vocational students.

## **2.3 Flipped classroom**

Flipped classroom is translated from "Flipped Classroom" or "Inverted Classroom". In 2007, in the American state of Colorado, a chemistry teacher began his recorded video posted online, to give the absent student makeup a missed lesson. Later, they carried out more innovative attempt - students staying home and watching the video learning course made by teachers, teachers mainly answering questions, mentoring, and communication. This is the origin of the flipped classroom. In the flipped classroom, the teacher provide micro video as the main form of learning resources, students complete the micro video learning resources to watch and learn before class, teachers and students together finish the homework q & a, collaborative inquiry and the interactive communication activities such as a new type of teaching mode. It is the biggest benefit of the comprehensive promotion of the interactive classroom. Evaluation approach is from the traditional single paper to test to flip the angles of classroom, multimode, multi-dimensional.

## **3. Problems existed in the flipped classroom practice**

### **3.1 Misunderstanding of the focus of Flipped classroom implementation**

In the implementation of Flipped classroom, many people focus too much on the production of teaching resources, this is actually a misunderstanding. Making teaching resources is important, but the organization of the classroom and the guidance of students are more successful factors . Teachers really do education according to students' aptitude, they must carefully prepared and carefully observe: the need to solve the problems of students before class; how to ensure the completion of the preview before class; the most problems of knowledge in process of preparation ; how to organize the classroom; how to let the students discuss. "Flipped classroom" must pay attention to the students "internalized absorption", the cultivation of students' individual ability and learning effect.

### **3.2 Lack of effective management to the flipped classroom implementation platform**

In flipped classroom, the teachers ' production of video resources and the electronic version resources, basically through QQ group or WeChat group push, to let the students themselves to download to watch, also between teachers and students, or between students can exchange of information and discuss problems through group. But because these platforms are lack of effective regulation of the student, Whether students really teaching resources, progress, teachers can't understand, and in such a network platform students often send some content which has nothing to do with classroom teaching resources, to interfere with the students' learning. Therefore, for higher vocational students, even if

teachers take idea to design teaching resources, but due to the lack of learning initiative and self-consciousness of students, without a good platform, then the flipped classroom teaching effect is not ideal.

#### **4. Analysis on the advantages of the flipped classroom teaching mode based on SPOC**

The flipped classroom teaching mode based on SPOC is the combination of the SPOC online learning mode and the face to face classroom teaching mode, which realizes the integration of information technology and education.

##### **4.1 The advantage of knowledge acquisition in depth**

In the flipped classroom, Students are active constructors of knowledge, conduct autonomous learning, inquiry learning and cooperative learning. MOOC focus on knowledge dissemination and replication, SPOC focus on knowledge construction and the formation. SPOC, with advanced education and information technology support, changes time and space constraints of traditional teaching mode of learning, provides rich learning materials to students anytime and anywhere, can be communicated and collaborated at any time and place, achieves the open education environment, provides a strong guarantee for knowledge acquisition to flipped classroom<sup>[3]</sup>.

##### **4.2 The advantages of deep integration of learning experience**

Koelbl learning model stressed: learning cycle is a continuous process of reciprocating, such as a variety of concepts to test constantly in practice, and make appropriate dressing; learning direction is the learner himself according to their own needs and goals to control, these needs and goals must be summed up, to prevent bias or inefficiency learning; learning is a highly personalized experience, so the learning style should be based on the specific circumstances of each individual and the environmental conditions, according to a predetermined operation mode to adjust. MOOC provides broad virtual learning space for learners, SPOC constantly repairs the targets for the learners, provides specific guidance to test in practice, flipped classroom provide personalized learning conditions for learners.

##### **4.3 The advantages of deep integration of instructional design**

MOOC provides a wealth of knowledge unit for the majority of learners; SPOC organizes the course content according to individual cognitive rules and logic of knowledge, makes rich knowledge unit forming the contents of the system ,according to the course content of cohesive and boundaries,. At the same time, creates a good learning environment for flipped classroom design.

#### **5. Construction of flipped classroom teaching mode based on SPOC**

According to the characteristics of the SPOC and learning characteristics of higher vocational students, this article from the three stages of before class, in class and after class to build model, namely, network, classroom and extracurricular three platforms, before class, in the class and after class three stages, cognitive, internalization and sublimation of three steps of teaching model. Before class stage, mainly is the student through the network learning platform, autonomous learning, the knowledge of cognition; in the class stage, mainly students through classroom teaching, communicate with the teacher, for solving puzzles, realize the internalization of knowledge; after class stage, mainly is the student extracurricular practice, team cooperation, jointly complete group work, and realize the knowledge sublimation.

##### **5.1 Stage before class: based on the network teaching platform, knowledge cognition , independent learning**

At this stage, the teacher is mainly to make a careful analysis of the characteristics of students' learning, according to the characteristics of the course content, teaching objectives and knowledge

requirements, the modular organization of teaching content, again according to the classification of knowledge within the module, the selection of knowledge can be divided into the following several types: basic knowledge, improved knowledge and expanding knowledge. Flipped classroom mainly selects "basic knowledge", at the stage before class teachers design "students how to cognitive?" And prepare relevant learning resources for students, such as to guide students to self-study guiding case and teaching resources. For video teaching resources, should be according to the knowledge points, each of the video time control in 10 minutes or so commonly, the opening credits as short as possible. Of course, also can choose to use "synchronous SPOC (are all made of high quality MOOC online resources)", or "asynchronous SPOC (part of the teaching content MOOC resources online, and the rest made by teachers) model"<sup>[4]</sup>.

At this stage, the teacher is the designer of "SPOC flipped classroom "content and progress, teachers should according to students' specific learning situation, do video, relevant information to view the task arrangement, the design of the operation, and the organization of online communication activities; the student is the executants of the flipped classroom, according to the teacher's requirements listed to complete the learning content, and the assignments and online communication activities, students are real" leading role ".

## **5.2 Stage in the class: classroom teaching platform as the core, knowledge internalization, FAQ**

The students through learning of flipped classroom before class ,have certain cognition of the knowledge points, mainly through contact with teachers in the classroom, and further practice, make knowledge internalization, improve the quality of learning. To flipped classroom teaching content, homework evaluation firstly, and then a universal problem for students to concentrate on, in the form of Blog to post the content of the evaluation result, the students also have the freedom to add; Secondly, put forward new tasks in the classroom to students, and further practice, if they can't solve the problems, to other students for help in time, group together to complete, but still can't solve, in the process of teachers' patrol, to the teacher for help. Thus knowledge internalization, real grasp of knowledge. The stage in the class teachers should design "students how to understand knowledge?".

At this stage, the teacher is the leader of "SPOC flipped classroom", according to the students to complete homework situation, summarizes knowledge, decorate new task, students through the practice operation, internalize knowledge. During classroom teaching, the teacher for "basic knowledge", emphasis, no longer explains; for improving knowledge ", emphasizing the difficulties, select a representative case strengthening exercises; for expanding knowledge, emphasis on innovation, students study for spare capacity can carries on the practice and application in the project. Teachers can reasonably arrange classroom time, the emphasis and difficulty is prominent and the efficiency of the classroom is improved.

## **5.3 Stage after class: the extracurricular practice platform as supplement, knowledge sublimation, group collaboration**

According to the characteristics of the course, if it is a kind of computer course with strong operation , taking advantage of the integrated operation, in group,to improve the students' comprehensive practical ability and cooperation ability. Students can make use of expanding knowledge provided by teachers in the flipped classroom to practice innovation, interact with teachers and classmates online, so that the students furtherly consolidate learning content, digest, get the sublimation of knowledge. After class stage teachers should design " students how to practice?".

In this stage, the teacher is the auxiliary of "SPOC flipped classroom", according to the students to complete the work, teachers targeted counseling and communication, the students in the teacher's help and collaboration of the group, and group communication, make knowledge get sublimation.

## 6. Summary

Based on SPOC flipped classroom teaching mode, enriches the MOOC under the background of teaching model, makes the education of information technology in depth fusion, has realized the online before, in the class, after class three phases, the combination of the students from knowledge to knowledge internalization, again the process of knowledge sublimation, truly achieve the "student-centered" teaching paradigm change, the teaching mode can be the SPOC computer class teaching widely, but its specific implementation method "owing to the different class", also needs further exploration of the teachers in the teaching process.

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# The 2015 and Early 2016 Stock Price Crash in China: Cause and Lessons

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**Keywords:** Stock price crash; Securities lending and borrowing; Bailout market crash.

**Abstracts.** During 2015 and early -2016 there happened three times stock market crash in china. These three stock price crash have made great hazard to most people who participant this market for evaporating great wealth in stock market. It evaporated great wealth in China stock market .Through analysis we think that the direct and main cause of the crash is the great foam of stock, others including the mainstream media inappropriate remarks, too many companies IPO quickly, rapid and stern deleveraging, the SFC institutions regulation sluggish and it's crude and rash of innovative activities. So in the immature China stock market, all the regulation's innovation and great impress actions must be carefully and the government should not impose too many duties on the market.

## 1. Introduction

During 2015 and early -2016 there happened three times stock market crash in china. These three round stock price crash have made great hazard to most people who participant this market for evaporating great wealth in stock market. It is estimated that 80% of China's urban households has been tied with the stock market, either directly to purchase stock share or purchase the equity funds to invest in the stock market. The collapse time is short and has great destructive power. Thousand shares dropped to the stop trading line which has never been in the past. The crash directly affected the living standards of most of the urban families.

Before the crash, the central government wishes to impose some service for the economic transformation, technological innovation etc. on stock market. Therefore there some inappropriate words appeared in the mainstream media. They called this round prosperous market as for economy reforming. An important newspaper even said that the Shanghai composite index's 4000 point being just the start point of a bull market. At that time a large quantity deposits flow to stock market quickly from banking system. Many people who invested in stock market were enjoyed with the market's prosperity. The Shanghai composite index had risen from 2480 point on Nov.24 in 2014 to the 5178 point on Ju.12 in 2015<sup>1</sup>.

But, unfortunately the market turned round. From June 12, 2015 to July 9, 2015, the Shanghai composite index dropped down sharply from 5178 to 3709. The direct event was the China securities regulatory commission issued relevant policy, asking brokers should not be involved in illegally outside funding, and began deleverage action. During this period, the stock market's wealth evaporated 18 trillion Yuan RMB. Merrill lynch argued that China's stock market was full of bubbles, once broken would fell 30%. Central bank lowered the deposit reserve and cut interest rates on June 27 for rescuing, releasing 600 billion liquidity. Securities regulatory commission on June 29 made checking illegal holdings sale action. On July 3, Central Huijin company buying shares from the secondary market was confirmed, and it promised not to resale the shares. The CSRC said

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<sup>1</sup>These data from Stock trading software  
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to reduce IPO and make many efforts to guide long-term funds entering the market.

On July 4, the stock market dropped sharply. The CSRC announced to pause 28 share's IPO and the Exchange returned the funds to investors for purchasing the new IPO shares which would be issued on Friday. 21 investment banks raised 120 billion Yuan RMB to purchase shares and announced not to sale stock in the market. At last, on July 9, the ministry of public security agreed with the CSRC to screen malicious short selling. Across the market manipulation was prescribed by the CSRC malicious short, verification HOMS system, monitoring the OTC funding with umbrella trust. By now, the market began to rise. We can call this period as the first round of the crash.

During the period from July 24, 2015 to August 26, stock index plunged 1300 points and the market value of 30 trillion was evaporated. This period can be called the second round of the crash. On July 24, 2015, China securities finance co., LTD who promised not to resale its holding shares to the market suddenly announced to transfer some its' shares, triggered a market collapse. On August 4, several brokers to suspend securities lending business. On August 31, the CSRC announced that more than 10 hands of stock index futures' short selling could be identified as abnormal trading. From November 1 to November 27, many securities executives and the CSRC official are investigated, and the stock market began to be stable.

From January 4, 2016 to 27, this period can be considered as the third round of the crash. During this time, the Shanghai index plunged 1000 points, and the stock market value was evaporated 7.4 trillion Yuan RMB. As chief leaders of the CSRC considered the reason of above several rounds of crash, which thousands of stocks dropping to stop trading was the irrational behavior of investors. So the CSRC introduced an out circuit breakers mechanism to the stock market. But the result was tragedy. There were four times fusing in the two trading days, and on January 6 within 15 minutes after the market opened, the trading was finished for twice fusing. On January 7 in the evening, the CSRC announced to suspend the mechanism in the market. By February 20, the central government replaced the CSRC chief leader.

## **2. The causes of this stock market crash**

A share's high price has begun to lead the risk of stock price crash accumulated. From July 2014 to June 12, 2015, the Shanghai Composite Index rose from 2000 point to 5178 in July 2014, less than a year's period, the Shanghai Composite Index rising nearly 160% overall. The last round of bull market did not get the support of the macroeconomic fundamentals. In China's macroeconomic downturn situation, China A stock market was incredibly in a bull market. According to the Shenzhen Stock Exchange Statistics: by June 5th, Shenzhen stock average P/E ratio was 67.13 times; and SME board stock average P/E ratio was 83.16 times. The GEM average price earnings ratio was 143.17 times, more than 2 times the average price earnings ratio of the stock. This is very rare in the world's stock markets.

Over the past 6 years, China's money supply has surged to 75 trillion Yuan RMB, more than 250% growth rate. As in the end of 2014, China's M2/GDP reached 1.93, a record high. At the same time, by the impact of international and domestic environment, the pressure of China's real economy adjustment, economic slowdown, overcapacity, all these reason led the large industrial fund to go into the stock market. At the same time, huge sums of money through a system like HOMS enlarged the lever age several times. Above a variety of reasons, the A shares was led to the rapid rising in a short term. When A share price was much higher than the average level of overseas, but the real economy was still in the adjustment, once the liquidity in the stock market was affected and became drying up, share price downside is inevitable.

The IPOs speed in A market were issued too fast in short term. Since the beginning of 2014 to the end of June 2015 IPO, a total of 268 shares were listed in the two A stock market, raising a total of about 200 billion Yuan RMB. Only in the first half of 2015, the Shanghai Stock Exchange and the Shenzhen Stock Exchange had issued 187 shares, raising funds about 146 billion Yuan RMB. In mid June, 25 new shares were listed and it raised funds over 41 billion Yuan RMB. Among them,

GuotaiJunan could raise money about 30 billion Yuan RMB. On July 1st, the Bank of Jiangsu passed the CSRC's auditing, and the scale of raising money was about 40 billion Yuan RMB. That means that the Bank of Zhejiang and other local banks would also be issued IPO quickly, so that investors in the stock market felt panic, and the stock market fell. The stock index declined for three consecutive days and the cumulative decline of over 10%. This shows the negative effect of the IPO on market sentiments.

To deleverage to squeeze the bubble finally triggered the stock market crashing. A securities research report of Huatai broker released in July 6th showed that the Chinese stock market leverage fund was about 3 trillion and 300 billion Yuan RMB. It was basic of the rapid increase in the stock market bubble, after reaching the 5000 point, the CSRC finally realized the risk of leveraged. Then, the CSRC began to clean up illegal financing behavior, and for OTC capital was to take a broad brush approach to be prohibited by the brokerage securities online trading. Forcing the highly leveraged funds quickly panic exit and it resulted market selling shares fell down.

The mainstream media inappropriate words added fuel to the market. In the stock market which the stock price rising sharply situation, the market need more rational expression, unfortunately, some of the mainstream media and important officials were also irrational. For example, when the Shanghai Composite Index stood at 4000 points, there was an authority article of the media said the bull market at 4000 points was only the beginning. Again, when the index reaching 5000 points, and the Commission officials said, the bull market was for the reasons of economy reform and the stock market has its own foundation. It was in these remarks, under the incitement, the investors became more and more irrational, and the stock market bubble got rapid amplification.

When the stock market began to fall, the stock index futures short selling made stock market crash intensified. Stock index futures short selling at that time could offer the speculator to get the huge profits' opportunity. And some institutional investors even through to manipulate the stock market to achieve the purpose of making money in the stock index futures. The stock index futures market and stock market crash exacerbated by the stock market crash, two markets' performance became a kind of vicious circle.

Although the stock market crash of ferocious, but the stock market supervisory authority's reaction to rescue was dull and slow, and most of the rescue measures are also lack of targets. Even the stock market supervisory authority's attitude of the bailout was not firm at that time. At last, bailouts were not effective, and crash continued to spread.

### **3. What we can learn from the event**

The stock market regulations are not stable and sometimes even change violently and suddenly is one of the main causes of this crash. Regulations are not coherence in advance and afterwards. The direct cause of the stock market crash is the CSRC investigation OTC capital funding. The CSRC didn't be cautious in the early stage of risk to encourage a variety of financing capital to fund stock market. And when the stock index at 5000 points is relatively high, The CSRC began to realize the risk of the market and implemented the measure of "one size fits all" to force the leverage funds from OTC to quit from stock market, directly leading the stock market fall from the high position. When the crash occurred, the regulatory authorities did not reduce the IPO batch, but continued to issue many IPO projects. In the early stage of the stock market crash, the regulatory authorities did not recognize the seriousness of the situation, but thought that was a "natural market adjustment", missed opportunities.

There are defects on the market structure system for this crash. One is the transaction time structure imbalance. China's stock trading practice T + 1 mode, and the implementation of futures T + 0 mode, once the stock market crash, the market will give a large number of repeated short index futures speculators provide opportunities. Visible, spot and futures market trading risk is not equal.

The official opinion to public should be cautious and neutral. In the market, the authorities should maintain a neutral attitude, and the position should be consistent. For example, the mainstream media in the stock index reached 4000 points said this was the beginning of the bull

market, regardless of the consequences to encourage people to blindly rush into the stock market. While the market was downward cliff, the mainstream media was strangely silent, making investors get the impression that this crash was the state sanctioned conspiracy. Conspiracy theories and internet rumors can be so crazy spread, making this strength through serious fall of public positions. It extremely struck the China economy. In fact, in the very period, as the official representative of the government, they should come forward to give investors confidence, rather than keep silent.

#### 4. Suggestion

It should be careful to develop brokerage securities lending and borrowing business in a stock market, for the large scale of brokerage margin trading business can enlarge the stock market risk high. The illegal addition of the OTC financing for shares business should be resolutely clean up. To establish the stock stabilization fund is an important tool to deal with the stock market crash. The establishment of stock stabilization fund on a scale of a trillion Yuan RMB, or even by the state credit guarantee in order to fully stabilize investor expectations, to prevent market collapse may occur under the expected deterioration.

To bailout the stock market is like the fire fighting, so it must arrive in time. When the short-term market volatility occurs, the national team should be decisive, underpinning of the market, and not hesitate. Meanwhile the stock stabilization fund should make a detailed and feasible stabilization plan in advance.

The rules should be coherence is one of the main fact to avoid stock market crash. The determination of the regulatory authorities' innovation should be cautious. When the regulatory authorities issue a new policy, they should consider the market's bearing capacity first and then take appropriate measures. The mainstream media should be required especially in the capital market remain neutral attitude.

#### 5. Conclusion

The stock market crash what happened in China in 2015 and the early of 2016 has made great hurt to most investors who take part in China A stock market. And this crash increased the risk of financial markets even affected the financial system's stability. This crash evaporated trillions of wealth. The main causes of this crash could be drawn for three aspects: the high leverage funding for trading stock especially for purchasing stock, the CSRC issuing new polices without considering the market's bearing capacity and at inappropriate time, the bailout for the crash being not powerful, the mainstream media at inappropriate time saying in appropriate words. So to avoid next stock market crash, it is important for the CSRC issuing new polices and making any forms of innovation. For the stock market itself being a high risk market, high leverage margin trading will enlarge the risk sharply, so it should be cautious to open leverage margin trading in stock market, even it has be launched, it should be in a low level. The last advice is for the mainstream media should be natural as they are regarded to be on behalf of the government. For the inappropriate words in the mainstream media can cause a great disturbance in the stock market.

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## Research Overview about Employee Assistance Programs

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**Keywords:** EAP; Employee Assistance Programs; Enterprise

**Abstract.** Explanation the basic concepts, formation and development, content and form and the development of EAP .Understanding the significance of EAP to the enterprise development. Expectation the EAP trend in modern enterprise development and application.

### 1. The basic concept of EAP

EAP is abbreviation of employee assistance programs), meaning is the employee assistance plan, is by the organization (such as companies, government departments, military, etc.) for its members to set up a system, long-term assistance and welfare programs. It through professional diagnosis, advice, and to the organization members and their families of professional guidance, training and consulting, to help solve psychological and behavioral problems of organization members and their families, in order to maintain the organization member's mental health, improve the working performance of the organization members, to improve the organization's management and image, so as to establish a good humanities environment.

### 2. The emergence and development of EAP

In the 1940 s, some companies in the United States found that due to problems such as alcoholism, drug addiction and drug abuse affects employees and enterprise performance, so some companies then please psychological expert help employees to solve the problem of these individuals, employee assistance plan (EAP) thus arises at the historic moment. In the 60 s, the social changes, unemployment, work stress, family violence and divorce, legal disputes and other issues become more and more affect employee's mood and performance, the content of the EAP project also gradually increasing. In 1971, in Los Angeles has set up a EAP professional organization, that is now the predecessor of the international association of EAP. Since then, the European and American developed countries began using behavioral therapy to improve the staff's bad behavior.

EAP has now far beyond the original work mode and service content, along with the social problems of complexity, diversification, the service content of EAP gradually expanded to solve people work pressure, mental health, disaster events, career, health life style, legal disputes, wealth management, weight loss and eating disorders, more and more to help employees with personal problems in all aspects. Accept behavior modification employees to a great extent, get rid of their bad habits, job performance also improved obviously. EAP is gradually expand to other aspects, such as work stress, mental health, money problems, family conflict, professional problems and crisis events, etc.

Occupational Alcoholism Programs (Occupational Alcoholism Programs, OAPs, 1939-1962). At the beginning of the 20th century, some American companies began to notice due to employee's alcoholism, drug addiction and other drug abuse problems affected employees and corporation performance, companies began to hire experts to discuss the possibility to solve these problems.

Since the 1940 s, occupational alcoholism programs career to start in many American companies in the implementation and popularization. Sixties and seventies of the 20th century, due to the dramatic changes of American society, alcoholism, drug addiction, drug abuse has become a serious social problem, and marriage and family problems, depression, legal disputes and other personal problems is becoming more and more the important factor affecting the employee’s mood and performance, so many OAP started to increase their service content and to expand the service object to relatives of employees.

Employee Assistance program (Employee Assistance Programs, EAPs, 1962-present). In the 1960 s, the original OAP expanded its service content into EAP, expand the range of help employees to solve its personal problems, and improve their ability to solve problems independently. At this time, the enterprise mainly use of some system intervention methods to understand and diagnose the problem employee behavior, and explore the deeper reasons behind. At the same time actively provide family, legal, medical, financial assistance, to help employees to solve practical problems. During this period, the United States in 1970 formally established National Institute on Alcoholism and Alcohol Abuse, NIAAA, and Association of Labor and Management Consultant Alcoholism, ALMACA, responsible for the study and promotion of employee assistance plan, by 1991 ALMACA renamed employee assistance professional institutions Employee Assistance Professionals Association, EAPA.

Occupational Health Promotion Programs, OHPPs (Occupational Health Promotion Programs, OHPPs, 1980-present). OHPP is the employee assistance program for OAP is too general, lack of detailed description of employee psychological and behavioral problems of insufficient. It is used to find and solve those both inside and outside the workplace employee health concerns caused by the floorboard of the measures and actions, aimed at by improving employee health maintenance costs, improve the level of the mental and physical health of the employees, eventually achieve the goal of improve the work efficiency and the organizational performance. Pay attention to employee health concerns, preventive, is OHPP main difference with other project.

Employee Enhancement Programs, EEPs (Employee Enhancement Programs, EEPs1988-present). Since the 1980 s, some new concepts of EAP extend to EEP, with its emphasis on stress management, comprehensive health lifestyle, and quality of work life, relationship management, to improve work and after work can gradually cause future health problems. Staff planning a systematic, comprehensive, dynamic, advanced features. Can be seen from the four stages in each put forward a new plan would mean a new development of EAP project, as well as the new attempt of the application.

From the beginning only for drinking problem universal psychology to focus on staff development, to working to improve work and after work may cause future health problems. More and more has the characteristics of systemic, comprehensive, dynamic and advanced.

**3. The content and service mode of EAP**

**3.1 The content of the EAP**

From the development of EAP we can clearly see that the content of the EAP no longer as in the early 20th century only for the specific problem of organization of the individual, drinking alcohol, but developed into problems involving various influence individual and organizational performance( Table 1) .Now it is because of the scope of EAP is more and more widely, level more and more, each organization's situation and the demand is not the same, so each the contents and forms of EAP project is complex and changeable.

Tab.1.EAP change trend of the past 50 years

In the 1940 s of the EAP Only in the U.S.	Today's EAP The world within the scope of the developed countries
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Only alcohol related problems	The use of broad areas including marriage emotional work problems drug and alcohol abuse
Managers confirm the drinking problem	Managers confirm the working problem
Site treatment	Off-site treatment
Mandatory treatment	Voluntary treatment
lack of confidence to therapy	Have confidence in treatment
The management plan	Management and union plan
Informal policy	A written policy

Now EAP service content mainly involves three aspects: the personal life, work and organization development. Personal life: health problems, interpersonal relationship, family relationship, economic problems, anxiety, emotional distress, legal issues, alcoholism, drug addiction, and other related issues. Work problems: job requirements, a sense of fairness, working relationship, bullying and intimidation, interpersonal relationship, family balance, working pressure, and other related issues. Organization development, about services program of enterprise development strategy ,can bring certain benefits to organizations, for example, needs through the organization measures, the system of human management methods; about the process of organizational change service projects, such as layoffs, relocating EAP special items, such as the need to completely according to the requirements of the organization and to tailor. In general, an EAP service to begin from organization and employee needs assessment and program planning, in order to better complete the project must be EAP promotion, then aiming at the problem of employees and their families to provide the corresponding short-range consulting (individual or group), training and other forms of services to help employees to improve and solve their personal problems, achieve personal and organizational performance. EAP, of course, will also provide special services, such as team building, crisis intervention, staff service, etc. General structure of EAP can use the image below to basic summary (Figure 1)

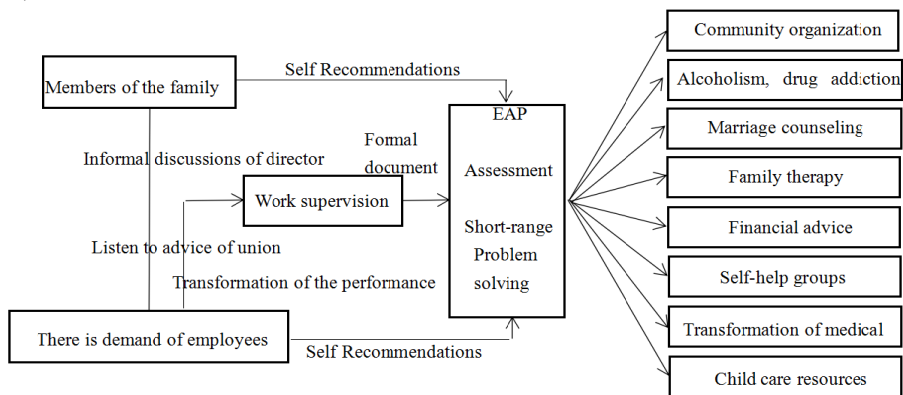


Fig.1. The general structure of employee assistance program (Cagney, 1999)

### 3.2 The service delivery model of EAP

EAP service delivery refers to the service object needed services through planned process transfer to the staff, make staff would be able to accept the service. It with the service provider has a close relationship, most of the employee assistance plan main service provider is the enterprise organization and paid by the enterprise external service providers, the union is another source of assistance service. In general, according to the service main body can be divided into internal and external, combined model and mixed model. Internal model is to point to set up a special department within the organization, by internal full-time personnel responsible for the planning and implementation of EAP. External model refers to the organization will EAP project outsourcing, by external knowledge of social work and counseling experience of professionals and professional institutions for staff to provide the corresponding EAP services. Joint model is refers to the number

of groups jointly set up a specialized provide EAP services for employees. Mixed mode refers to the EAP enforcement departments within the organization and outside professionals provide EAP services together with the agencies. These EAP service mode all have their own advantages and disadvantages, organizations need to choose according to their own actual situation.

#### **4. Outlook of the application of EAP in China enterprises**

Along with the deepening of the reform and opening up, market economy mature , the trend of the internationalization of enterprises more obvious, the popularization and application prospects of EAP in China will getting better and better.

##### **4.1 The social recognition of EAP will greatly ascend**

As EAP service enterprise landing in China, the success of the application, people pay more and more attention to problems of mental health.EAP services make people care about their mental health, when psychological problem appear, they can seek EAP service in time actively, they can make themselves always maintain a positive healthy mentality. EAP service idea and service effect will be as enterprise EAP service promotion, establish a more extensive mass base, social recognition will greatly improve, people in EAP services at the same time, also actively spread EAP service concept, make the EAP walked into the office, school and so on all walks of life.

##### **4.2 EAP will be applied in more and more enterprises**

With the acceleration development of EAP service idea, the enterprise will pay more and more attention to employees' psychological problems. Enterprises will not only set up psychological counseling department, to provide consulting services for employees, help employees resolve psychological crisis, and set up special funds, the implementation of the psychological counseling to provide financial support for the enterprise. In addition, the enterprises will also support staff to external professional psychological consulting institutions to counseling to maintenance of psychological health of employees, effectively promote the development of enterprises.

##### **4.3The development of EAP will get government support**

As the reform gradually thorough, the social contradictions increasingly prominent, in this process, EAP will play an important role. EAP, with its unique way to adjust the mood, guides people's health point of view, to maintain the harmony of social relationships. In order to maintain the stability and harmony of the society, promote the reform smoothly, the government will also be using the power of EAP, help resolve conflicts, solve the problem of people's psychological imbalance. Therefore, the government will formulates policies to encourage enterprises, government agencies, schools, such as the introduction of EAP services, support the creation of EAP service industry association, relief EAP services business tax, etc.

##### **4.4 EAP management will be more standard and perfect**

As the EAP application in Chinese enterprises and the promotion, help EAP implementation, guide the application of EAP industry association will be more and more, the management of the EAP services will be more perfect, EAP service concept will be more thorough popular feeling, EAP service rules will be more and more specifications. At the same time, in order to better meet the requirements of EAP services, EAP professional training institutions will be more and more, the training institutions will be carried out in the industry more and more formal EAP professional training, constantly improve the quality of the EAP practitioners, make more EAP practitioners into EAP services. All of these will further promote EAP service to develop in the direction of standardization, specialization.

##### **4.5 EAP international cooperation will be more frequent**

EAP service originated from western countries, and western countries experience in EAP played an

important role in promoting the EAP services in China's rapid development, improve service quality and effect of EAP development potential. EAP service in our country's future will be continuously explore with Chinese enterprises on the basis of the actual combination of EAP development road, promote domestic EAP services continuously to communicate with foreign EAP services to continue to study abroad EAP services and advanced management experience. At the same time, will also with foreign EAP service agencies to carry out more extensive cooperation, frequent EAP services international cooperation will speed up development of EAP services in China, for application of EAP in China promotion provide wider space.

## 5. Conclusion

The development of EAP abroad, although has decades of history, but was only a short few years time to enter the Chinese enterprises. About the research of the application of EAP in China enterprises, whether the application of EAP theoretical system, or EAP application in the concrete method of the enterprise, is also in the unceasing exploration.

## 6. Others

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# Knowledge Management System Based on KDD Process

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**Keywords:** Knowledge Management System; Knowledge Discovery from Databases; SECI model; KDD process.

**Abstract.** Knowledge is a very crucial resource to promote technology development which includes facts, information, descriptions, or skills acquired through experience or education. With knowledge has being increasingly prominent, knowledge management has become important measure for the core competence's promotion. The paper begins with knowledge management's definition, and studies the process of knowledge discovery from databases (KDD), data mining techniques and SECI (Socialization, Externalization, Combination, Internalization) model of knowledge dimensions. Finally, a simple knowledge management system was proposed which based on the KDD and data mining.

## 1. Introduction

There are different definitions about knowledge management, the most famous is what knowledge management is getting the right information to the right people at the right time, and helping people create knowledge and share and act upon information in ways that will measurably improve the performance of an organization and its partners. The core idea of knowledge management is: explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation.

Knowledge management's three elements are people, workflow and technology. People is core element, workflow is basic element, technology is support element which include data mining, data analysis, business intelligence, knowledge map, knowledge database, knowledge portal and so on. The paper focus on data mining techniques. Expression of knowledge management as follows:

$$KM = (P + K)^s \quad (1)$$

KM is knowledge management, P is people, + is technology, K is knowledge and s is share, the expression's meaning is by using technology bind people and knowledge, with the increase of share's power, knowledge's value is power level growth.

## 2. SECI model

The most important method of knowledge management is transform tacit knowledge into explicit knowledge. SECI model represent the transformation process, the theory of organizational knowledge creation developed by Ikujiro Nonaka and his colleagues originated in studies of information creation in innovating companies and appears to have undergone two phases of development.

Four modes of knowledge conversion were identified as Fig. 1 [1].

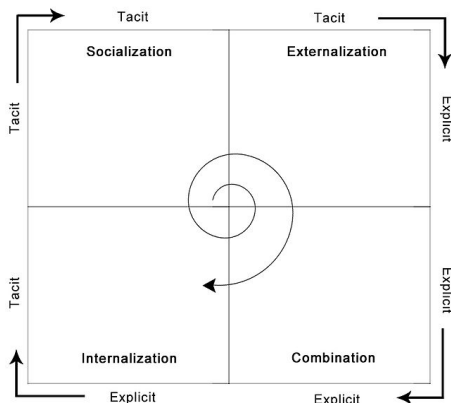


Fig.1.ECI model

Tacit to Tacit (Socialization) - This dimension explains Social interaction as tacit to tacit knowledge transfer, sharing tacit knowledge through face-to-face or share knowledge through experiences.

Tacit to Explicit (Externalization) - Between tacit and explicit knowledge by Externalization (publishing, articulating knowledge), developing factors, which embed the combined tacit knowledge which enable its communication.

Explicit to Explicit (Combination) - Explicit to explicit by Combination (organizing, integrating knowledge), combining different types of explicit knowledge.

Explicit to Tacit (Internalization) - Explicit to tacit by Internalization (knowledge receiving and application by an individual), enclosed by learning by doing; on the other hand, explicit knowledge becomes part of an individual's knowledge and will be assets for an organization.

### 3. KDD process

Data mining is the non-trivial process of identifying valid, novel, potentially useful, and ultimately understandable patterns from huge volume of data. Data mining is the analysis step of the KDD process. KDD process is defined with seven phases: data cleaning, data integration, data selection, data transformation, data mining, pattern evaluation and knowledge presentation<sup>[2,3,4]</sup>.

Data mining is the core step of KDD process. The paper only studied data mining techniques in KDD process. Common data mining techniques mainly can be divided into three categories: clustering analysis, its purpose is to establish group data into classes without knowing the class labels; association analysis, its purpose is to draw associations among objects and discovery items occur frequently together; classification, its purpose is to find a model for predicting the class labels of unseen data[5,6,7].

Clustering analysis is the most application of knowledge management in data mining techniques. The paper mainly studied clustering analysis. Clustering can be used as a stand-alone tool to gain insight into the distribution of data and to serve as a preprocessing step for other data mining tasks.

Data matrix and dissimilarity matrix are data structures used in clustering[8-12]. Forms as follows:

$$\text{Data matrix: } \begin{bmatrix} x_{11} & \cdots & x_{1j} & \cdots & x_{1n} \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ x_{i1} & \cdots & x_{ij} & \cdots & x_{in} \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ x_{m1} & \cdots & x_{mj} & \cdots & x_{mn} \end{bmatrix} \quad \text{Dissimilarity matrix: } \begin{bmatrix} 0 & & & & \\ d(2,1) & 0 & & & \\ d(3,1) & d(3,2) & 0 & & \\ \vdots & \vdots & \vdots & \ddots & \\ d(m,1) & d(m,2) & \cdots & \cdots & 0 \end{bmatrix} \quad (2)$$

The  $i$  in data matrix's  $x_{ij}$  represent  $i$ -th instance and the  $j$  represent  $j$ -th attribute. The  $d(3,2)$  in dissimilarity matrix represent dissimilarity between the 2nd and the 3rd instance.

Dissimilarity, or similarity, is often defined with the help of some distance measures and a distance measure should satisfy following requirements:  $d(i, j) \geq 0$  the distance is nonnegative;  $d(i, i) = 0$  the distance from an object to itself is 0;  $d(i, j) = d(j, i)$  the distance is a symmetric function;  $d(i, j) \leq d(i, h) + d(h, j)$  triangular inequality.

Suppose there are  $n$  attributes, two tuples  $(x_{i1}, \dots, x_{in})$  and  $(x_{j1}, \dots, x_{jn})$ , Minkowski distance is:

$$d(i, j) = \left( |x_{i1} - x_{j1}|^q + |x_{i2} - x_{j2}|^q + \cdots + |x_{in} - x_{jn}|^q \right)^{1/q} \quad (3)$$

If the attributes have different importance, weights can be used:

$$d(i, j) = \left( w_1 |x_{i1} - x_{j1}|^q + w_2 |x_{i2} - x_{j2}|^q + \cdots + w_n |x_{in} - x_{jn}|^q \right)^{1/q} \quad (4)$$

Special cases of Minkowski distance that are often used euclidean distance

$$d(i, j) = \sqrt{|x_{i1} - x_{j1}|^2 + |x_{i2} - x_{j2}|^2 + \cdots + |x_{in} - x_{jn}|^2} \quad (5)$$

And manhattan distance.

$$d(i, j) = |x_{i1} - x_{j1}| + |x_{i2} - x_{j2}| + \cdots + |x_{in} - x_{jn}| \quad (6)$$

Different kinds of attributes require different kinds of dissimilarity measures. Interval-scaled attributes are continuous attributes of a roughly linear scale. Euclidean distance or other cases of minkowski distance can be applied and before applying distance measure, the attributes should be normalized. The normalization scheme often used here is a variation of z-score normalization:

$$v' = \frac{v - \text{mean}_A}{\text{mean\_abs\_dev}_A} \quad (7)$$

Ordinal attributes can be discrete or continuous and order is more important than real values and ordinal attributes can be treated like interval-scaled attributes. Ratio-scaled attributes are continuous attributes of a nonlinear scale. Binary attribute has only two possible values: 0 and 1. Due to the limited space, the paper does not introduce their methods.

#### 4. Knowledge management system

Implementation of knowledge management system is divided into several steps, as shown in figure 2. The first step is to find the inside data source and outside data source, and then by using a variety of tools and methods to deal with data which include data cleaning, data integration, data selection, data transformation, data mining, etc. Extract and transform data into knowledge, and knowledge is stored in the knowledge database. Plus some demand traction and business logic, to reorganize the knowledge in knowledge database, the formation of the various knowledge module. Finally, release the knowledge, makes user can retrieve knowledge through browser.



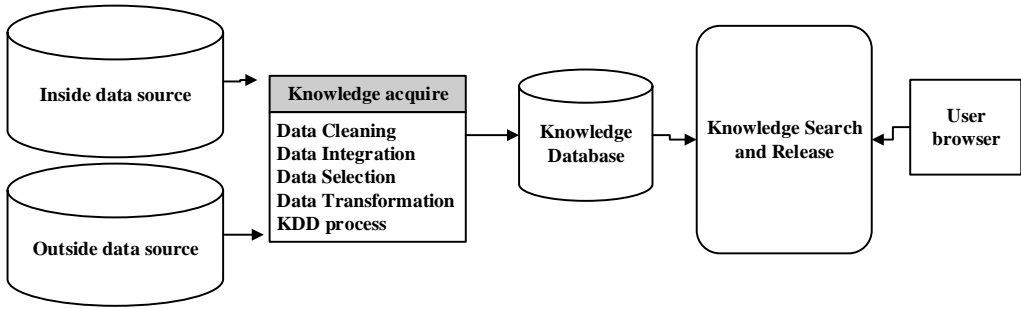


Fig.2.Implementation framework of knowledge management system

A kind of xml file format of knowledge extract as follows:

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<ParaType> XXX </ParaType>
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</XMLNodeInfo>
</RegExDefine>

```

Knowledge management system's specific implement process as follows:First, implement the clustering analysis mining on employing the clustering analysis algorithm. Second, implement knowledge management system's configuration which include Knowledge management prototype system run environment configuration,knowledge management prototype system run flow,WEB application deploy configuration and System whole situation configuration. Third, write source code of page template (.html), page specification (.page), page class(.jave) and some component class related to the business logic in knowledge management prototype system.

## 5. Suggestions

Knowledge management system implement knowledge extract and sharing, but lack of innovation and decision analysis models, this is future effort way.

## 6. Acknowledgment

Thanks are due to Dr. Guo Yudong for valuable discussion.

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# The Effect of Social Capital in School Choice and Investment in English Language Learning among Secondary School Students in Rural China

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**Keywords:** Social capital; English language learning; School choice; Investment.

**Abstract.** This study illustrates the significance of social capital in English language learning among rural secondary school Chinese students. The effect of social capital on the school choice and investment during the progress of English language learning for these students will be demonstrated in this article. Inhomogeneous distribution of social capital aggravates divisions and inequalities between different social classes.

## 1. Introduction

In term of social capital, Bourdieu (1986) defined social capital as “the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition”. That means social capital represents the resources which individuals accumulate based on relationships with other people. Social capital describes the sum of resource-rich, trustworthy and reciprocal network connections as an asset that empowers a group and its individual members to efficiently achieve their goals (Chen, Stanton, Gong, Fang, & Li, 2009; Coleman, 1988; Portes, 1998). There are a number of researches about the social capital. Coleman (1988) posited three forms of social capital: as obligations and expectations, as information channels, and as social norms. The obligations and expectations are considered as stands for membership in certain group; information channels supply opportunities for members, and social norms serve as the criteria for rewarding or restraining individual activities. As well, social capital plays an important part for students’ success as well under the circumstances of education. For instance, social capital in the form of parental expectations and obligations for educating their children matters; the network and connections between families whom the school serves matter; to the disciplinary and academic climate at school matter; and to the cultural norms and values that promote student efforts matter (Stevenson & Stigler, 1992). In Chinese, the term of *guanxi*, a principle concept in Chinese society, is closely equal to the conception of social capital. *Gunaxi*, whose literal meaning is “connections” or “relationships”, has an actual meaning far beyond this, as sometimes relationships are not necessary to produce *guanxi*. *Guanxi* refers to “a dyadic, particular and sentimental tie that has the potential of facilitating favor exchanges between the parties connected by tie”. (Bian, 2006). In other words, it is a form of social investment or social capital (Butterfield, 1983) and it creates a culture of connections and provides one with easy access to limited resources, increases access to controlled information, credit grants and protection from external competitors (Lee, Pae Wong, 2001). A great number of Chinese people value the importance of *guanxi*. The important role of *guanxi* is highlighted in the Chinese expression, “one more connection offers one more road to take” and it is “the informal connections so essential to gaining approval for or access to just about everything in China.” (Tsang, 1998).

In the context of English language education, social capital has effect on numerous aspects. This study demonstrates the effect on school choice and investment in English language learning for the students from rural regions in China.

## **2. Methodology**

Qualitative research method is adapted in this study. The main technique of interview is used in the present research to gain data collection.

### **2.1 Participants**

Ten students in grade nine from a rural secondary school in the southwest of China and their parents are selected as participants. Most of citizens of the town are peasants or from working class. Based on the diversity, the participants come from different social strata including official family, peasant family, working class family and left-behind family. Left-behind child is a sort of unique phenomenon under rapid economic development throughout China. With the increasing economic disparity and rapid urbanization in China, a large number of rural residents migrate to cities to seek employment and leave their children behind in the rural area (i.e. left-behind children) (China Women's Federation, 2008). These children are under the care of relatives, mostly grandparents with little or no education, or family friends. In most of cases, the supervisors do not have the physical ability, financial means, or knowledge needed to take care of these children. These children suffer various difficulties due to the long absence of parent in their life. Some studies suggested that left-behind children were likely to suffer from a broad range of mental health problems (Fan & Sang, 2005; Wen & Lin, 2012), such as depression, anxiety and loneliness (Magwaza, 1994; Ren & Shen, 2008).

### **2.2 Data collection**

It took four months when the participants graduated from secondary school and intended to go to senior high school to make the individual interview and each interview lasted approximately ninety minutes. Semi-structure interview was adapted to make the interviewees talk whatever about their real feeling and thoughts under the guide questions. All of the conversations were recorded by tape-recording with agreement of the interviewees. The guide questions were following,

- a. Which senior high school is your/your child's preferred school after you/your child graduated from secondary school?
- b. Is English education a factor to affect your school choice?
- c. Does your parents'/your guanxi help you/your child to go to the preferred school?
- d. Does your parents'/your guanxi help you/your child to make investment in English learning? If it does, how?

## **3. Data analysis**

After the complication of data collection, all interview data was interpreted and coded into textual material and then the texts were systematically evaluated based on the conceptual frameworks. Grounded theory and content analysis were adapted for this research.

## **4. Findings and discussion**

Because of the examination-driven educational system, the main criterion in China to classify the level of school is transition rate. Besides the transition rate, school management, teaching quality, school admission processes and learning environment are regarded as the factors to classify school level. Therefore, schools are divided into national-level, province-level, city-level and county-level. The distinctions between different level schools are especially obvious in English education. For instance, teachers from English-spoken countries are very common in the top level schools, while

other schools suffer from the shortage of professional English teachers. Moreover, the students in top level schools are able to get an amount of approaches to learning English culture, such as exchanging students program and summer camp in English-spoken countries, which is almost impossible for students from other level schools.

According to the Compulsory Education Law of the People's Republic of China (National People's Congress, 1986), school placement in the compulsory education sector should be determined on the basis of proximity. It means the official policy on school choice is only for post-compulsory education (i.e., senior high school). However, in reality, school choice takes place in both compulsory and pre-compulsory (i.e., kindergarten) and post-compulsory (i.e., senior high school) education in urban regions because choice fees benefit the schools, the local governments and those parents as well as their children who obtain a place in their preferred school (Wu, 2008). Nevertheless, in rural China as this research setting, a small town in the southwest of China, such kind of effort is unavailable. Most of participants' parents are local peasants or from working class, and they are much less probable to have relatives or acquaintances in powerful or influential positions as "parental networks tend to be homogeneous with respect to class... Working class and poor networks do not encompass middle-class parents." (Horvat, Weininger, & Lareau, 2006). Their networks seem not powerful enough to oppose the official policy about the school choice. Some of students don't have access to English until they go to secondary middle school while most of kids learn English as early as in pre-education (i.e., kindergarten) in urban China. The unique opportunity for the participants to make school choice is when they go to senior high school. After the students graduate from secondary middle school, the determined factor for which level senior high school they can go is their academic scores in Senior High School Entrance Examination. Meanwhile, many senior high schools will offer a few extra limited options for the students who can't get the required cutoff scores including paying extra fees or owing special talents. During this process of school choice, *guanxi* of students' parents plays overarching part.

#### **4.1 Make investment to establish useful *guanxi* for school choice**

Based on the interview, some parents admit they have made early investment in developing their network in order to supply the access to target schools for their children. Their interpersonal networks serve as efficient means to gather useful information. One parent keeps sending gifts to the head teacher and main subject teachers (Chinese, English and Mathematics, which are considered most important subjects in common) and inviting them to have dinners. Some parents try their best to establish the useful connections. One parent keeps contacting with a man in local education department who is a friend of her classmates by sending gifts as early as when her daughter was in primary school. It is found the parents with capitals (no matter social, economic and cultural) have more obvious intentions to construct the connections with teachers. They more often visit teachers to get information since they believe the teachers have more opportunities to contact the target schools. Moreover, six of ten participants' parents show they attach much attention on the English teacher and make continual connections with English teacher. By doing this, they suppose the English teacher would give more concern to their children and supply more practice chances which will be helpful in the competitive procedures for the next level education. Not only English is regarded as one of the most important subjects, but also is proficiency in English considered to be a special talent in the admission of senior high school, especially the foreign senior high school. One of the participants, whose father is an official of local Bureau of Education, gets high score in the Senior High School Entrance Examination, which is over the admission score of the local top level senior high school. However, her father chooses one foreign senior high school in the capital city – Chengdu for her since his expectation is that his daughter can go abroad so the proficiency of English is vital. The participant mentions that her father mobilizes all his *guanxi* and makes every effort to let her matriculated by the foreign senior high school. And she is very excited that she gets an opportunity to go to Austria for one month and lives in a local home stay family. The participant admits her oral

English has been enhanced greatly, meanwhile she becomes acquainted with the procedure of applying university in Austria.

In contrast to this participant, another participant who is raised by his grandparents, that is, a left-behind family suffers from the shortage of his parents' social capital. He fails to be accepted by his target senior high school due to six lower than admission score. He learns that there are several limited quotas for the students who can't get the admission score on condition that one can pay extra fees. However, he fails to gain this opportunity. In practice, his family is able to defray the fees but as the opportunities is limited and his parents lack powerful *guanxi* to get the chance. His parents have been working in a coastal province since he was six months old. He even can't see his parents in person annually, as a result, although his parents have economic capital, the lack of social capital results in his failure. Just as his parents mentioned "Sometimes money is not everything. You have to own *guanxi* to find the right person offering you an access to paying the fees." What's more, their low educational level and subsequent life experience do not equip them to anticipate the importance of getting early involvement in their children's education and the credential inflation in the job market (Wu, 2012). Besides, they lack appropriate *guanxi* to solve their problem even though they are conscious of it.

#### **4.2 Guanxi affects the investment in English learning**

Norton constructs the concept of investment inspired by the work of Bourdieu (1991), and it signals the socially and historically constructed relationship of learners to the target language and their sometimes ambivalent desire to learn or practice it (Norton, 2000). She argues that if learners "invest" in the target language, they do so with the understanding that they will acquire a wider range of symbolic resources (language, education, friendship) and material resources (capital goods, real estate, money), which will in turn increase the value of their cultural capital and social power. As the value of language learners' cultural capital increases, so learners' sense of themselves, their hopes for the future and their imagined identities are reassessed. Hence there is an integral relationship between investment and identity, an identity which is theorized as multiple, changing, and a site of struggle (Norton, 2013).

McKay and Wong (1996) extend the notion of investment developed by Norton Peirce (1995) and they note besides focus on opportunities to speak, their research investigates students' investment in the four skills of listening, speaking, reading and writing. They argue that investment in each of these skills can be highly selective and that different skills can have different values in relation to learner identities.

Based on the data collection, it is judged that the participants without *guanxi* only invest in writing and reading. Under the examination-driven educational system, gaining high score is their main goal for English learning. The full mark for the English examination is 150 in the research setting province while listening part only occupies 25 and the rest of 125 is all about reading and writing. Normally, their English teachers devote a great deal of time on reading and writing in class and almost ignore the situation of students' oral English. There are a number of English institutions helping people enhancing oral English but the fees are high under the ordinary circumstances. Neither these participants nor their parents pay much attention on it due to the lack of economic, cultural and social capital. Their social identities determined by social capital limit the investment in English learning.

On the contrary, the participants with *guanxi* devote much time and energy on all of four skills, especially speaking and listening. It is fact that there is no speaking test in the examination, however, top levels senior high school will set extra examination of oral English. Parents often rely on their interpersonal networks, that is, their friends, relatives and colleague, to keep informed about the examinations of the target schools. Two parents admit that they have ever activated their social capital to obtain the inside information about the oral test of the preferred school. Furthermore, three parents of ten sent their children to attend English institution in order to enhance English learning. These parents emphasize the importance of investment in oral English proficiency and they believe it will be a great merit for their children's foreground. One pair of parents sends their daughter to an

English institution in Shanghai where all of English teachers are native speakers during summer vacations. Her fluent oral English offers great help when she took part in the examination of preferred foreign senior high school.

## 5. Conclusion

Social capital can help people achieve personal goals in many countries, and it is more significant in Chinese context. Guanxi is widely taken advantage of in amounts of fields including social interactions, business deals and gaining resources in Chinese society. Due to the rural-urban dual-structured society marked by a strict division between rural and urban areas of China, the effect of social capital seems more salient in rural areas. The finding of research indicates that guanxi plays an important role in school choice and investment in English language learning among secondary school students in rural regions. And unequal distribution of social capital which leads to unfairness has caused public concern.

Firstly, the findings demonstrate students from different social strata are not able to compete equally in term of activating social capital. Parents' income and education almost always lead to stratification in social networks, which results in the disproportion during the process of school choice. Parent with social capital use their own influential positions or find relevant guanxi to help their children secure a place in oversubscribed schools. However, parents without certain social capital are less likely to have capacity to do this as "parental networks tend to be homogeneous with respect to class... Working class and poor networks do not encompass middle-class parents" (Horvat, Weiginger, & Lareau, 2006). Their social connections are restricted mainly to the people of the same class who have no ability to gain relevant information about the preferred schools. One parent mentions the admission of senior high school is like an examination for him which examined his economic and social capital. Wu (2013) states the proportion of parents selecting schools for their children increases with their educational level, income and or the availability of their guanxi networks.

In addition, the effect of social capital on investment in English language learning is mostly on the selection of listening, speaking, reading and writing skills. Over the long term, this selective trend will influence the students' prospect both in their college life and job market. With the process of globalization, English has become a lingua franca in many parts of the world and China is no exception. The practical use of English language, in which listening and speaking occupy an important part, is valued by employers. English proficiency offers students priority in the competitive job market and it is very likely to aggravate the gap between students from different social class. This result may cause the problem of disequilibrium on resource distribution more severe. English acquisition can be valued as the term of cultural capital as Bourdieu and Passeron (1977) stated. It refers the knowledge and modes of thought that characterize different classes and groups in relation to specific sets of social forms. Learner who can speak fluent English are very possible to have a good return on that investment, that is, a return will give them access to hitherto unattainable resources (Norton, 2000).

This study reinforces social capital based on social-class difference maintains social visions and inequalities. As Doob (2013) indicated that social capital is passed from generation to generation and keeps people in the same social class, which keeps reproducing inequality through the system of social stratification.

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## 2-Hued Coloring of the Join Graph of Some Graphs

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**Keywords:** Hued coloring; Graph; Join graph.

**Abstract.** A  $r$ -hued coloring is a proper coloring of a graph such that for every vertex  $v$ , the neighborhood of  $v$  contains at least  $\min\{N_G(v), r\}$  different colors.  $r$ -hued chromatic number of  $G$ , denoted by  $\chi_r(G)$ , is the smallest  $k$  such that there exists such coloring with  $k$  colors. In this paper, some results on  $\chi_2(G)$  of the join graph are listed.

### 1. Introduction

Graphs in this paper are simple and finite. For a graph  $G$ ,  $V(G)$  and  $E(G)$  are used to denote the vertex set and edge set of  $G$ ,  $d_G(v)$  and  $N_G(v)$  denote the degree of  $v$  in  $G$  and the set of vertices adjacent to  $v$  in  $G$ ,  $\delta(G)$  and  $\Delta(G)$  denote the minimum degree and the maximum degree of a graph  $G$ ,  $C(k)$  denotes a set of  $k$  colors. The other terminology and notations are referred to [1].

*Definition 1.1* [2] For integers  $k > 0$  and  $r > 0$ , a proper  $(k, r)$ -coloring of  $G$  is a map  $c: V(G) \rightarrow \bar{k}$  ( $\bar{k} = \{1, 2, \dots, k\}$ ) satisfying both the following,

- (1)  $c(u) \neq c(v)$  for every edge  $uv \in E(G)$ , and
- (2)  $|c(N_G(v))| \geq \min\{N_G(v), r\}$  for any  $v \in V(G)$ .

For a fixed number  $r > 0$ , the  $r$ -hued chromatic number of  $G$ , denoted  $\chi_r(G)$  is the smallest  $k$  such that  $G$  has a  $(k, r)$ -coloring, a  $(k, 2)$ -coloring is also called a dynamic  $k$ -coloring. By the definition of  $\chi_r(G)$ , it follows immediately that  $\chi(G) = \chi_1(G)$ , and so  $\chi_r(G)$  is a generalization of the classical graph coloring, then  $\chi(G) \leq \chi_2(G) \leq \dots \leq \chi_{r-1}(G) \leq \chi_r(G) \leq \dots$ .

When  $r = 2$ , denoted by 2-hued coloring of graph. 2-hued coloring of graph have been studied extensively in the past decade. They gave some results in [3, 4, 5, 6].

*Definition 1.2* [7] Let  $G$  and  $H$  be two graphs, the join graph of  $G$  and  $H$  denoted  $G \vee H$ , is a graph obtained by starting with a disjoint union of  $G$  and  $H$ , and adding edges joining each vertex of  $G$  to each vertex of  $H$ .

In this paper we only discussed 2-hued coloring of some special double graphs and get its upper bounds of 2-hued coloring number.

Hongjian Lai proved the following three theorems in [3], when  $d = 2$ .

*Theorem 1.1* if  $\Delta \leq 3$ , then  $\chi_d(G) \leq 4$ , with the only exception that  $G = C_5$ , in which case  $\chi_d(C_5) = 5$ .

*Theorem 1.2* if  $\Delta \geq 4$ , then  $\chi_d(G) \leq \Delta + 1$ .

*Theorem 1.3*  $\chi_d(K_{1,1}) = 2$ ,  $\chi_d(K_{1,m}) = 3$  and  $\chi_d(K_{m,n}) = 4$  for  $m, n \geq 2$ ;  $\chi_d(K_{n_1, n_2, \dots, n_k}) = k$  for  $k \geq 3$ .

*Theorem 1.4*[4] Let  $G$  be a tree with  $|V(G)| \geq 3$ , then  $\chi_r(G) = \min\{r, \Delta(G)\} + 1$ .

## 2. 2-Hued coloring of the join graphs

*Theorem 2.1* Let  $P_m$  be a path with  $m$  vertices  $u_1, u_2, \dots, u_m$ , and  $P_n$  be a path with  $n$  vertices  $v_1, v_2, \dots, v_n$ , then  $\chi_2(P_m \vee P_n) = 4$ .

*Proof.* When  $m \geq 2, n \geq 2$ , we give a 2-hued coloring of  $P_m \vee P_n$  as follows:

$$\text{let } \begin{cases} c(u_i) = 1, i = 2h - 1 \\ c(u_i) = 3, i = 2h \\ c(v_j) = 4, j = 2k \\ c(v_j) = 2, j = 2k - 1 \end{cases} \quad h, k \geq 1, h, k \in \mathbb{N}^+ \text{ then } \chi_2(P_m \vee P_n) \leq 4,$$

By the Definition 1.1, let  $c(u_1) = 1$ , since  $u_2, v_1, v_2$  are neighboring vertices of  $u_1$  and  $u_1 u_2, u_1 v_2, u_1 v_1, u_2 v_1, u_2 v_2, v_1 v_2 \in E(P_m \vee P_n)$ , if  $c(u_2) = 3, c(v_2) = 2$ , then  $c(v_2) \geq 4$ , so  $\chi_2(P_m \vee P_n) \geq 4$ .

From the above,  $\chi_2(P_m \vee P_n) = 4$ .

*Definition 4*[6] Let  $S_{n+1}$  be a star with  $n + 1$  vertices  $u_0, u_1, \dots, u_n$ , in which  $d(u_0) = n$ , we call  $u_0$  be the center of  $S_{n+1}$ .

*Theorem 2.2* If  $n \geq 3$ , then  $\chi_2(P_m \vee S_{n+1}) = 4$ .

*Proof.* If  $m = 3, n = 4$ , we give a 2-hued coloring of  $P_3 \vee S_{4+1}$  as follows (see figure 1)

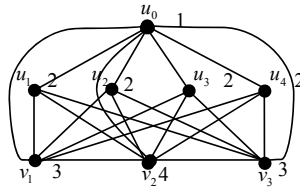


Fig.1.2-Hued coloring of  $P_3 \vee S_{4+1}$

Then  $\chi_2(P_3 \vee S_{4+1}) \leq 4$ .

$$\text{If } m \geq 4, n \geq 4, \text{ let } \begin{cases} c(u_0) = 1 \\ c(u_i) = 2, i = 1, 2, \dots, n \\ c(v_j) = 3, j = 2k - 1 \\ c(v_j) = 4, j = 2k \end{cases} \quad k \geq 1, k \in \mathbb{N}^+, \text{ then } \chi_2(P_m \vee S_{n+1}) \leq 4.$$

By the Definition 1.1 and the Definition 1.2, if  $c(u_0) = 1$ , might as well we give 2 to the vertices  $u_i (i = 1, 2, \dots, n)$ , and give 3 to the vertices  $v_j (j = 2k - 1)$ , since  $v_{2k}$  is the neighboring vertex of  $v_{2k-1}$ , then  $c(v_{2k}) \geq 4$ . so  $\chi_2(P_m \vee S_{n+1}) \geq 4$ .

Hence, we have  $\chi_2(P_m \vee S_{n+1}) = 4$ .

Let  $F_{n+1}$  be a fan with  $n + 1$  vertices  $u_0, u_1, \dots, u_n$ , in which  $d(u_0) = n, d(u_1) = 2, d(u_i) = 3 (i = 2, 3, \dots, n - 1), d(u_n) = 2$ , we call  $u_0$  the center of  $F_{n+1}$ . This referred to [7].

*Theorem 2.3* If  $n \geq 2$ , then  $\chi_2(P_m \vee F_{n+1}) = 5$ .

*Proof.* Let  $P_m$  be a path with  $m$  vertices  $v_1, v_2, \dots, v_m$ . If  $m = 2$ , we give a 2-hued coloring of  $P_2 \vee F_{3+1}$  as follows(see figure 2)

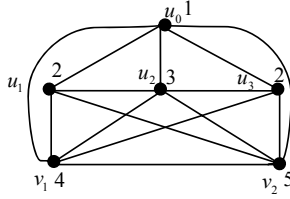


Fig.2.2-Hued coloring of  $P_2 \vee F_{3+1}$

Then  $\chi_2(P_2 \vee F_{3+1}) \leq 5$ ,

$$\text{If } m \geq 3, n \geq 3, \text{ let } \begin{cases} c(u_0) = 1 \\ c(u_i) = 2, i = 2h - 1 \\ c(u_i) = 3, i = 2h \\ c(v_j) = 4, j = 2k - 1 \\ c(v_j) = 5, j = 2k \end{cases} \quad h, k \in N^+, \text{ then } \chi_2(P_m \vee F_{n+1}) \leq 5;$$

By the Definition 1.1 and the Definition 1.2, if  $c(u_0) = 1$ , might as well we give 2 to the vertices  $u_i (i = 2h - 1, h \in N^+)$ , give 3 to the vertices  $u_i (i = 2h, h \in N^+)$ , and give 4 to the vertices  $v_{2k-1}$ , then  $c(v_{2k}) \geq 5$ , so  $\chi_2(P_m \vee F_{n+1}) \geq 5$ .

Hence, we have  $\chi_2(P_m \vee F_{n+1}) = 5$ .

**Theorem 2.4** If  $n \geq 3$ , then  $\chi_2(P_m \vee C_n) = \begin{cases} 4 & n = 2k \\ 5 & n = 2k + 1 \end{cases} \quad k \in N^+.$

*Proof.* Let  $P_m$  be a path with  $m$  vertices  $u_1, u_2, \dots, u_m$ ,  $C_n$  be a circle with  $n$  vertices  $v_1, v_2, \dots, v_n$ , if  $m = 3, n = 3$ , we give a 2-hued coloring of  $P_3 \vee C_3$  as follows(see figure 3).

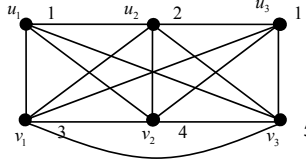


Fig.3.2-Hued coloring of  $P_3 \vee C_3$

Obviously,  $\chi_2(P_3 \vee C_3) \leq 5$ ,

$$\text{If } m \geq 3, n \geq 3, \text{ let } \begin{cases} c(u_i) = 1, i = 2h - 1; \\ c(u_i) = 2, i = 2h; \\ c(v_j) = 3, j = 2k - 1 (2k - 1 \neq n); \quad h, k \in N^+, \text{ then } \chi_2(P_m \vee C_n) \leq 5; \\ c(v_j) = 4, j = 2k (2k \neq n); \\ c(v_n) = 5 \end{cases}$$

By the Definition 1.1 and the Definition 1.2, might as well we give 1 to the vertices  $u_i (i = 2h - 1, h \in N^+)$ , and we give 2 to the vertices  $u_i (i = 2h, h \in N^+)$ , then  $c(v_{2k-1}) = 3 (2k - 1 \neq n)$  or  $c(v_{2k}) = 4 (2k \neq n)$ , because  $v_2$  and  $v_n$  are the neighboring vertices of  $v_1$ , so  $c(v_n) \geq 5$ .

From the above, we have  $\chi_2(P_m \vee C_n) = 5$ .

**Theorem 2.5** if  $m, n \geq 3$ , then  $\chi_2(C_m \vee C_n) = \begin{cases} 4 & m, n \text{ are all even} \\ 5 & m \text{ is odd, and } n \text{ is even} \\ 6 & m, n \text{ are all odd} \end{cases}.$

*Proof.* Let  $C_m$  be a circle with  $m$  vertices  $u_1, u_2, \dots, u_m$ ,  $C_n$  be a circle with  $n$  vertices  $v_1, v_2, \dots, v_n$ , if  $m = 3, n = 4$  or  $m = 3, n = 5$ , we give a 2-hued coloring of  $C_3 \vee C_4$  and  $C_3 \vee C_5$  as follows (see figure 4)

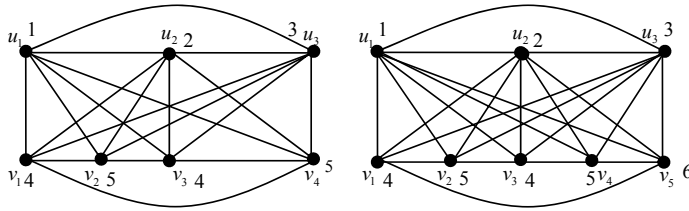


Fig.4.2-Hued coloring of  $C_3 \vee C_4$

2-Hued coloring of  $C_3 \vee C_5$

Obviously,  $\chi_2(C_3 \vee C_4) \leq 5$ ,  $\chi_2(C_3 \vee C_5) \leq 6$ .

*Case 1* If  $m, n$  are all even, we give a 2-hued coloring of  $C_m \vee C_n$  as follows,

$$\text{If } m > 3, n > 3, \text{ let } \begin{cases} c(u_i) = 1, i = 2h - 1; \\ c(u_i) = 2, i = 2h; \\ c(v_j) = 3, j = 2k - 1; \\ c(v_j) = 4, j = 2k \end{cases} \quad h, k \in N^+, \text{ then } \chi_2(C_m \vee C_n) \leq 4;$$

By the Definition 1.1 and the Definition 1.2, might as well we give 1 to the vertices  $u_i (i = 2h - 1)$ , give 2 to the vertices  $u_i (i = 2h)$ , and give 3 to the vertices  $v_i (i = 2k - 1)$ , because  $v_{2k-1}$  and  $u_i (i = 1, 2, \dots, m)$  are the neighboring vertices of  $v_{2k}$ , then  $c(v_{2k}) \geq 4$ .

So we have  $\chi_2(C_m \vee C_n) = 4$ .

*Case 2* If  $m$  is odd, and  $n$  is even, we give a 2-hued coloring of  $C_m \vee C_n$  as follows,

$$\text{If } m > 3, n > 3, \text{ let } \begin{cases} c(u_i) = 1, i = 2h - 1 (2h - 1 \neq m); \\ c(u_m) = 3 \\ c(u_i) = 2, i = 2h; \\ c(v_j) = 4, j = 2k - 1; \\ c(v_j) = 5, j = 2k \end{cases} \quad h, k \in N^+, \text{ then } \chi_2(C_m \vee C_n) \leq 5;$$

By the Definition 1.1 and the Definition 1.2, might as well we give 1 to the vertices  $u_i (i = 2h - 1, i \neq m)$ , and  $c(u_m) = 3$ , give 2 to the vertices  $u_i (i = 2h)$ , and give 4 to the vertices  $v_i (i = 2k - 1)$ , because  $v_1$  and  $u_i (i = 1, 2, \dots, m)$  are the neighboring vertices of  $v_{2k}$ , then  $c(v_{2k}) \geq 5$ . So we have  $\chi_2(C_m \vee C_n) = 5$ .

*Case 3* If  $m, n$  are all odd, we give a 2-hued coloring of  $C_m \vee C_n$  as follows,

$$\text{If } m > 3, n > 3, \text{ let } \begin{cases} c(u_i) = 1, i = 2h - 1 (2h - 1 \neq m) \\ c(u_m) = 3 \\ c(u_i) = 2, i = 2h; \\ c(v_j) = 5, j = 2k \\ c(v_j) = 4, j = 2k - 1 (2k - 1 \neq n) \\ c(v_n) = 6 \end{cases} \quad h, k \in N^+, \text{ then } \chi_2(C_m \vee C_n) \leq 6;$$

Similar to the case 1 and case 2, we have  $\chi_2(C_m \vee C_n) \geq 6$ , then  $\chi_2(C_m \vee C_n) = 6$

From the above, we complete the proof of Theorem 2.5.

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# Teaching Research on the University Practical Course Based on Taxonomy of Educational Objectives

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**Keywords:** Taxonomy Educational Objectives; Practice course; Teaching research.

**Abstract.** University practice teaching is an important step of high-quality college education system in cultivating various types of innovative engineering and technical personnel that meet the needs of economic and social development. However, the current course of college practice has significant shortcomings of monotonous teaching method and cognitive process isolated from the students, etc. The paper puts forward the innovation of the teaching reform of college practice course based on the “Taxonomy Educational Objectives” model. The practical results show that the application of “Taxonomy Educational Objectives” teaching mode encourages students to solve problems in independent design and develop a sense of achievement, thus inspiring their creation, exploration, discovery and constant learning and improving their practice and innovation ability.

## 1. Introduction

Experiment, as the basis of science, also promotes the development of science. It could be used to improve the enthusiasm of students for study, broaden their horizon, enhance their ability of problem analyzing and solving and hands-on ability. Therefore, the experimental teaching plays an important role in modern teaching. University teaching should be based on the all-round development of students' and its main role should be highlighted. In this way, students could have an intuitive understanding of the theoretical knowledge and their innovation ability will be improved accordingly. This kind of inquiry-based and cooperative learning may help students acquire the spirit of cooperation and healthy values. In the experimental teaching, if students could be placed in an environment full of challenges, they will be motivated to explore, understand and learn new things and experience a high degree of sense of enjoyment. Scientific researches show that this is the best state of learning, and practice has proven that the application of Taxonomy of Educational Objectives in the experimental teaching enables learners to achieve the best learning state.

## 2. Taxonomy of educational objectives

Benjamin Bloom (February 21, 1913 --- September 13, 1999), contemporary American psychologist and educator, proposed Taxonomy of Educational Objectives.

Taxonomy of Educational Objectives<sup>[1]</sup> classifies the learning behaviors of students to determine the specific degree of leaning and improve the criteria to evaluate their behaviors effectively. This theory has two characteristics: first, the objectives are quantifiable and measurable. In order to make the educational evaluation more objective and standardized, he proposed measurable objectives which could provide a more realistic and objective basis for the subsequent evaluation stage; second, objectives have hierarchical gradient, from simple to complex, and the subsequent objectives can only be established on the basis of the former goals which have been reached, thereby forming a hierarchy of objectives.



Educational objectives cover three main domains <sup>[2]</sup>: the cognitive domain of knowledge and knowledge use; the affective domain of the emotional reaction and value orientation of learning; the mental and body activity domain where the body activity is controlled by the mental activity.

### **3. The application and implantation plan of “Taxonomy of Educational Objectives” in the university experimental teaching**

The application of “Taxonomy of Educational Objectives” in experiment teaching makes the practical training more interactive and collaborative. The laboratory is a seminar room where students gather together to exchange ideas and opinions under the guidance of teachers. Teachers focus on the cognitive domain of knowledge and knowledge use, affective domain of the emotional reaction and value orientation of learning, mental and body activity domain where the body activity is controlled by the mental activity, in order to determine the teaching objectives scientifically. This could contribute to the teaching, help students acquire good practical ability and promote the all-round development, thus cultivating engineering talents with engineering practice ability.

#### **3.1 Task design**

Design the experimental task to promote students’ development in the cognitive domain of knowledge and knowledge use.

Teachers should innovate and design the experimental tasks based on the teaching content, which could prompt students to combine new experiences and the prior knowledge and stimulate their interest and creative thinking to explore new knowledge and new methods. In this process, first teachers should analyze and dig some major knowledge points to design funny, competitive tasks. Professional knowledge should run throughout these tasks. Fully arouse the enthusiasm and initiative of students and guide them to deepen the understanding of the professional knowledge, thus forming a certain framework and thinking ability. Through this process, students are inspired to combine knowledge and tasks which can fully examine their proficiency level and application ability, makes learning a more interactive, collaborative process. In the teaching process, teachers serve as experienced facilitators and students gather together to exchange ideas and opinions under the guidance of them which can exercise creative thinking and expansion capabilities <sup>[3]</sup>.

#### **3.2 Grouping**

Reasonable grouping allows students to explore knowledge in a team. Compared with traditional teaching, team learning is more effective in cultivating students’ critical thinking skills, self-esteem, positive social behaviors.

The grouping should be implemented based on the complementary principle <sup>[4-5]</sup>. Therefore, students could analyze, think, cooperate and reconstruct knowledge in practice so as to take the initiative to study exactly. Differences in gender, thinking, hands-on skills and personality in a group contribute to the complementary cooperation team where strengths of individuals can be easily played. Besides, balance should be kept between different groups, which is conducive to the communication and competition, and evaluation of practical activities. Group students by their differences, for example, articulate students and incommunicative students, students who are good at thinking and analysis and those with strong hand-on skills. Usually a group consists of 3-5 students and it could contribute to positive mutual support and cooperation as well as the face-to-face interaction. It is necessary to ensure that each group has equal strength, which is conducive for students to helping each other and progressing together. The relatively consistence of activity schedule could emphasize the positive interdependence among team members.

#### **3.3 Joint effort of students and teachers to guide the progress in class**

Teachers and students should make joint efforts to guide the progress in class and focus on the affective domain of the emotional reaction and value orientation of learning of students.

83% of the experts predict that education will become more personalized and great changes are also expected to take place to the traditional roles played by teachers. Teachers and students will make joint efforts to guide the progress in class. In this process, teachers should encourage students to participate in cooperative learning and discussion, help them fix mistakes<sup>[6-7]</sup>, so that every student will be involved. In addition, teachers should actively coordinate relationships, reduce and avoid conflicts, give timely help and guidance for those groups where students fail to cooperate with others, and enable students to carry out self-monitoring, so that each group can benefit from learning and complete the tasks on time.

The inspection and regulation for students cannot be too frequent, for it is not conducive to cultivating their self-confidence and excessively depending on teachers. Due to the objective difference of students in physical development and psychological characteristics, it is necessary to tutor them based on the individual differences. Teachers should give students appropriate incentives, pay attention to their practical ability and encourage them to discuss, reflect and adjust their ideas for the practice programs. Task-based questions can be asked to promote this process. In this way, students could gain self-fulfillment and the joy of success, which will cultivate their confidence and interest in learning, thus promoting the positive development of the affective domain of the emotional reaction and value orientation of learning of students.

### **3.4 Assessment**

Teaching assessment theory defines the assessment as the appraisal of each part of the learning process as well as the corresponding correction and assessment of the learning behaviors rather than just focus on the final result.

The combination of various assessment mechanisms encourages students to acquire more knowledge. The assessment mechanism based on the "Taxonomy of Educational Objectives" should contain the assessment of teachers on students as well as that of students on students, which could effectively detect the level of knowledge acquisition and practical ability of every student. In this way, students could really experience the role by active thing, practice and creation, thus achieving self-worth and acquiring the sense of achievement.

The assessment can be process assessment, reflection assessment and development assessment<sup>[8-14]</sup>. Process assessment is to assess the practical ability, sense of teamwork and so on of students in the process of task implementation. Reflection assessment is to clarify the self-evaluation and feedback of the technologies of the task implementation after they have completed the task. Development assessment is an important platform to demonstrate the individual potential and innovative thinking of students where students state their innovative ideas in the process of task implementation and teachers give some useful suggestions.

Demonstrate the experimental results and all students will be involved in this activity which entitles them a sense of achievement. In practice, each student expresses his own opinions in the exchange process and the team, as a whole, will make them have certain making it certain responsibilities and generate motivation. Besides, the competition between these groups should be encouraged and this kind of healthy competition is conducive to their development. The inner team competition will promote the coordination and cooperation of team members. In this process, teachers should focus on the participation, division of labor, cooperation, coordination of students and encourage them. School education should not be the "mass production" of students that are only good at examination but the qualified citizens who are able to make a clear distinction between right and wrong and have compassion, a strong sense of commitment and sound mind.

## **4. Conclusion**

"Taxonomy of Educational Objectives" can help teachers formulate teaching objectives more precisely and make them better organized, thus delivering impressive teaching results. Learners interact by trial and error and learn in the process; transform the traditional teacher-centered teaching

to student-centered teaching; shift the textbook-based practice into mission-based, and alter the classroom-centered mode while centering on the practical experience. Give students full freedom to use the laboratory, help them unlock their potential and enhance their practical ability. During the process of memorizing, understanding, application, analysis, evaluation and creation, they are expected to achieve the collision and communication of emotion, knowledge, wisdom, and values. This will encourage the development of students with comprehensive abilities and the spirit of revolution, innovation, and teamwork.

## 5. Others

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# The Influence of Regulatory Focus to Consumer Information Preference in Product Harm Crisis

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**Keywords:** Product harm crisis; Information board; Preference; Information processing technology.

**Abstract.** This study was designed to investigate whether consumers with different regulatory focus have preference on crisis information and crisis response and their information process approach in the product-harm crisis. A number of 127 college students were tested to discover the information processing process when doing information board decision making. Result showed that: (1) the promotion focus subjects paid more attention to crisis response, while prevention focus subjects had preferences to crisis information; (2) promotion focus subjects had a deeper information processing than prevention focus subjects; (3) both group of subjects tended to use heuristic information processing strategies and when the higher the time pressure is, the more likely they use heuristic information processing strategies.

## 1. Introduction

Product harm crisis is defined as a certain kind of adverse events caused by commercial products which will adversely affect or affected consumers. Product harm crisis will rapidly affect cognitive behavior of consumers as well as the subsequent purchase. However there is always a certain time lag before companies reporting to public and consumers' ability to acquire such crisis information differ a lot. At the same time, a variety of true and false news would spread like wildfire on the social media, which increases the handling capacity and difficulty to consumers on this crisis information. Under such circumstance, consumers often cannot rely on rational decision making or deep cognitive systematic processing strategy, but on finite rational decision making strategy based on limited information, a strategy more dependent on intuition. This strategy is called heuristic processing strategy, featuring using less time, knowledge and calculating capacities as well as making adaptive choices to reality <sup>[1]</sup>. Heuristic processing strategy requires self-activation of interactive information in memories and judgment by individual experience <sup>[2]</sup>. Obviously, the memory and experience of each person are different because their personal experiences and growth trajectory. So the result of individual heuristic strategy is more differentiated. To the crisis company, it is vital to find some similarities in the after-crisis decision-making process of different consumers, so as to sum up a number of targeted crisis management strategies to help companies to deal with the crisis more easily.

Researchers found that the process of individuals adjust their self-recognition and thus change thoughts and actions is known as self-regulation <sup>[3]</sup>, and the tendency and approach of individuals in the self-regulation is known as regulatory focus <sup>[4]</sup>. Promotion focus individuals attach more actively to the realization of aims, while prevention focus individuals pay more attention to avoiding adverse results <sup>[5]</sup>. The theory of regulatory focus inspired the author that although the difference of memories and experiences, there are rules to follow in the process of self-regulation in the process of heuristic information processing and the subsequent tendency and behavior. Previous

study pointed out the promotion focus individuals think and explain more on the relationships and they are good at identifying commonalities and relationships between different things; prevention focus individuals think and explain more on the details and they are good at identifying the characteristics of a specific thing<sup>[6, 7]</sup>. When a crisis occurs, the enterprise crisis information and crisis response are two issues that consumers are generally concerned about. So, are there any relationships between regulatory focus and crisis information as well as crisis response?

Crisis information is a basic expound of all kinds of media, which often did not involve a deep analysis about the cause, response of the company toward these crisis and other complex contents. This feature of crisis information coincided with the detailed thinking pattern and the concerning preference of specialty of prevention focus. Crisis response is an explanation and response to the crisis after a study made by the crisis. The causes of the crisis involve many aspects of enterprise inside and outside. When explaining of the causes of the crisis, company will employ a series of strategies according specific situation of the crisis. On one hand, it expresses concerns of the company about the negative impact of the crisis, on the other hand, it also express the determination that a series of measures will be taken to minimize the adverse consequences of the crisis in the future. So compared to crisis information, crisis response often involves dealing with the relationship between multiple subjects, and need more abstract thinking as well as logical evolution process. This feature of crisis response coincided with the abstract thinking pattern and the relational preference of promotion focus. This study hopes to explore whether the regulatory focus individuals have a preference to crisis response and whether the prevention focus individuals have a preference to crisis information.

On the other hand, it is believed that time pressure will affect the individual decision. Researchers pointed out that high time pressure will affect the cognitive process of decision making<sup>[8]</sup>. While some scholars found that under high time pressure, individuals tend to use heuristic strategy to deal with and process information<sup>[9]</sup>. Consumers will get lots of information about the crisis, and sometimes it's difficult to distinguish whether it is true or false. In this case, whether consumers will continue to use the heuristic processing strategy or will change and tend to use the systematic processing strategy is also to be verified.

Information board technology is one of the methods of decision making process. Compared to other methods of tracking process, it is easy to use, inexpensive and easy to collect data<sup>[10]</sup>. In this study, we explored consumers with different regulatory focus and their focus preference on information about crisis information and crisis response after the product crisis happened by information board technology, So as to provide advice for companies' crisis management.

## **2. Method**

### **2.1 Subjects**

We collected the samples randomly from the students of a university in Shanghai, which included 62 boys and 65 girls who were normal and corrected visual acuity and had not experienced such kind of experiments before.

### **2.2 Research tools**

#### *2.2.1 The regulatory focus questionnaire*

This paper adopted the "Regulatory Focus Questionnaire of Chinese Version", which based on the amended Higgins's "Regulatory Focus questionnaire" by Qi Yao and excluded the factor of "carefully enough to bring their own troubles" whose analysis result is not ideal, remaining 10 questionnaire items. In the verified version, we have 6 questions for the promotion focus and 4 questions for the prevention focus, among of them there are 6 reverse items. The internal consistency reliability coefficients of the two dimensions are 0.658 and 0.608 respectively, showing that the structure of the questionnaire is good.

Considering the classification method for the two focus, this paper used SPSS 19 to adjust the

reversed items reversely, and then calculate the average scores of the promotion focus and prevention focus respectively, after which we got the median of the difference of average scores between the two dimensions, and the subject whose difference is higher than the median belongs to the promotion focus while the lower than the median belongs to the prevention focus. According to this method, we got 70 people with the promotion focus and 57 people with prevention focus.

### 2.2.2 Information board

Each information board is formed by an options × characters matrix, subjects can see the covered information by mouse over this field, and the information will disappear when mouse out. Researchers can find the choice preference of the subjects by monitoring the information acquisition process of decision makers.

Adopting Mouse lab WEB 1.0beta designed by Martijn and Eric to make an information board experiment, this experiment imitate a process of consumer decision making in product harm crisis environment. The article chooses the severity of crisis results, whether the crisis reason comes from the internal and whether the company made the crisis premeditated as the characters of crisis information and chooses the response attitude, response speed and consumer’s approbation degree to the response as the characters of crisis response according to the previous studies and questionnaires. The sample information board is as the table 1, all the covered information is open. In the formal experiment, subjects will finish 4 assignments of information board except the practice one.

Tab.1.Sample of consumer decision making information board in crisis environment

	Product A	Product B	Product C	Product D	Product E	Product F
Response attitude	Good	Median	Bad	Median	High	High
Severity of crisis results	Median	Minute	Serious	Serious	Minute	Median
Response speed	Slow	Slow	Quick	Median	Median	Quick
Whether the crisis reason comes from the internal	External	Internal	External	Internal	Internal	External
Consumer’s approbation degree to the response	High	High	Low	Median	High	High
Whether the company made the crisis premeditated	Premeditated	Unpremeditated	Unpremeditated	Premeditated	Premeditated	Unpremeditated

## 2.3 Experiment design

This study used a 2×2 (promotion focus/prevention focus) × [low time pressure (63s)/high time pressure (42s)] within-subject design. Five elements were chosen as the dependent variables, which are the mean hit rate of board, the mean processing time of each cue, the mean decision time of finishing each information, depth of search (DS), patterns of search (PS). The first two reflect the subject’s crisis choice preferences, and the others reflect the subject’s information processing mode. Among of this, depth of search, DS=the number of the opened cells/the total number of cells, while patterns of search, PS=(within options - within cues) / (within options + within cues)<sup>[10]</sup>.

## 2.4 Experiment process

The study identified the experiment reasonable time by launched a pre-experiment. Measured 15 university students’ mean decision time of finishing each information board (64s, SD=21s) by invited this students complete the 6 products information board with no time limit, Then we confirmed the low time pressure is 85s, and the high time pressure is 43s.

Subjects were told their fixed number before the experiment, and then they completed the experiment on the specified computer which established a database that can record the experiment process. During the process, a welcome page was firstly presented in front of the subjects, pressed ‘Next step’ to the basic information unit, subjects should input their number and complete the

questionnaire of demographic statistics variables. Information board experiment was presented after the regulatory focus questionnaire. Several products from different companies which had experienced product harm crisis before were given to the subjects, they should choose one after they get information they need from the information board. Time reminder is on the below of the board, two low time pressure board and two high time pressure board was included.

**3. Results and Discussion**

**3.1 The preference of different regulatory focus in two different conditions**

Table 2 and 3 illustrate the participant's mean hit rate of board and the mean processing time of each cue when they faced with crisis information items and crisis response items under different experimental conditions. After the variance analysis of 2x2 mixed design, the results are as follows, when it comes to the mean hit rate of board,  $F = 5.31, p < 0.05, \eta^2 = 0.12$ , it suggests the main effect of regulatory focus is significant,  $F = 7.19, p < 0.05, \eta^2 = 0.27$ , it suggests the main effect of time urgency is also significant. However,  $F = 11.89, p < 0.01, \eta^2 = 0.13$   $F = 0.41, p > 0.05$  suggests the interaction effect isn't significant. When it comes to the mean processing time of each cue,  $F = 7.96, p < 0.05, \eta^2 = 0.18$ , it suggests the main effect of regulatory focus is significant, it suggests the main effect of time urgency is also significant. However,  $F = 0.16, p > 0.05$  suggests the interaction effect is not significant. We saw that when crisis happened, the mean hit rate of board and the mean processing time of each cue of the promotion focus subjects are higher than those with prevention focus on crisis response items; the mean hit rate of board and the mean processing time of each cue of the prevention focus subjects are higher than those with promotion focus on crisis information items. Moreover, both of the rate and the time decrease significantly when time turns to high pressure.

Tab.2.The mean hit rate of board by different regulatory focus on experiment conditions

	Promotion		Prevention	
	Low time pressure	High time pressure	Low time pressure	High time pressure
Crisis information	1.49	0.85	1.52	0.89
Crisis response	1.50	0.77	1.12	0.70

Tab.3.The mean processing time of each cue by different regulatory focus on experiment conditions

	Promotion		Prevention	
	Low time pressure	High time pressure	Low time pressure	High time pressure
Crisis information	4473	2177	4484	2239
Crisis response	4716	2641	3894	2167

**3.2 The formation processing method of different regulatory focus in two different conditions**

Table 4 shows the subjects' mean decision time of finishing each information, depth of search, patterns of search. After the 2x2 variance analysis, the results are as follows: When it comes to the mean decision time of finishing each information,  $F = 9.04, p > 0.05$ , it suggests the main effect of regulatory focus is not significant,  $F = 12.81, p < 0.01, \eta^2 = 0.21$ , it suggests the main effect of time urgency is also significant. However,  $F = 0.41, p > 0.05$ , it suggests the interaction effect is not significant. When it comes to the depth of search,  $F = 9.70, p < 0.01, \eta^2 = 0.11$ , it suggests the main effect of regulatory focus is significant,  $F = 4.53, p < 0.05, \eta^2 = 0.06$ , it suggests the main effect of time urgency is also significant. However,  $F = 0.86, p > 0.05$ , it suggests the interaction effect is not significant. When it comes to the patterns of search,  $F = 7.55, p > 0.05$ , it suggests the main effect of regulatory focus is not significant,  $F = 9.15, p < 0.05, \eta^2 = 0.19$ , it suggests the main effect of time



urgency is significant. However,  $F = 3.89, p > 0.05$ , it suggests the interaction effect is not significant. We knew that the mean decision time of finishing each information and the depth of search of the promotion focus subjects are higher than those with prevention focus, but there is no significant difference in the Patterns of search between the two different regulatory focus, they all take the heuristic exploration mode. Moreover, both of the mean decision time of finishing each information and the depth of search decrease significantly when time turns to high pressure.

Tab.4.The mean decision time of finishing each information, depth of search and patterns of search by different regulatory focus on two experiment conditions.

	Promotion		Prevention	
	Low time pressure	High time pressure	Low time pressure	High time pressure
The mean decision time of finishing each information	35223	31240	34910	28973
Depth of search	0.63	0.39	0.54	0.31
Patterns of search	-0.12	-0.20	-0.03	-0.25

## 4. Discussion

### 4.1 Effect of regulatory focus on crisis preference

This study quotes regulatory focus theory in Product Harm Crisis field. And it is found that consumers' focus preference over crisis information varies with their different regulatory focus. Specifically speaking, consumers of promotion focus care more about crisis reaction; while consumers of prevention focus pay more attention to crisis information. Besides, when decision time for subject is under high time pressure, all they can do is to focus on the side which can help them make decision. Thus, subjects' choice under high time pressure can highlight preference difference on regulatory focus. Author holds that consumers of protection regulatory always make decision from the harm-free direction, in which process they identify things' characteristics. So in order to avoid crisis harm, consumers hope and do well in mastering crisis-handling information and make harm-free choice by collecting crisis information. Authors prospect that consumers of promotion focus always make choice from the orientation of acquiring positive goals. They identify connections among commodities and are expert in analyzing complicated logics and narration. For consumers of promotion focus, their shopping is based on the realization of aims from products. After the crisis, they are inclined to explore the deep root of crisis and companies' solutions for crisis. In the past, when researching product harm crisis, academicians always focus on crisis status and ignore the behavior difference caused by consumers' personality. Author holds that company could make different strategies according to consumers' varied personality when crisis happened, especially when market is oriented to consumers with specific disposition. <sup>[11]</sup>

### 4.2 Consumers' information process methods in crisis

An increasing number of researchers view that people make decision with reasonable strategy partly. The experiment turns out that their scores in searching mode are negative no matter its promotion focus or protection focus. The shorter decision time is, the lower subjects' scores in searching mode are. The above-mentioned consumers are all inclined to make decision with illuminated strategies. The shorter their decision-making time is, the more they prefer to make choice with illuminated strategies. Meantime, this study shows that subjects' value of promotion focus is higher than that of subjects of protection focus, no matter if time is limited. Author hold perhaps it's because consumers of promotion focus can abstract and process more information than that of consumers of protection focus. This result reminds enterprises that it takes more time to realize crisis and judge decision for consumers of promotion focus in handling products harm crisis. Thus enterprises have much time in disposing crisis reasonably.

## 5. Conclusion

It is found that focus preference of consumers with different orientation varies a lot. Consumers of promotion focus have more crisis focus preference, while consumers of protection focus have more crisis information preference. And both of them take illuminated strategies to process information in crisis. The shorter the time is, the more they are inclined to take illuminated strategies. Besides, consumers of promotion focus have much decision depth than that of consumers of protection focus. However, for most of samples in this experiment are college students and subjects' factors such as gender, age, and brand loyalty are not regarded, so the experiment design is relatively easy. And real products harm crisis environment is much more complicated than that of experiment, so there still exist some problems in this study to be considered and solved.

## 6. Acknowledgement

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# Research on the Strategy-oriented Performance Evaluation of University Library

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**Keywords:** College; Library; Strategy; Performance.

**Abstract.** In the 1970s, Europe was once the library community is facing financial pressure, decreasing purchasing literature resources, the information needs of readers was increasing. Under this pressure, in order to fight for more funds to serve the readers, the library community began to attach great importance to scientific management, emphasis on efficiency and effectiveness of the service. Thus, in Europe and America-based international library pioneered Library Theory and Practice Performance Evaluation. Earlier studies focusing on inputs library, resource center. To the 20th century, along with the theory of customer satisfaction in the library, and the library community began to shift investment from the impact and effect on readers to measure their performance, which is reader-centered. But both lack of systematic and strategic outlook: resource-oriented tend to make the library and indulge in the current business processes, while ignoring the reader's satisfaction, often too idealized reader-oriented, while ignoring the library assumed other balance between the functions. Therefore, the ability to establish a system of strategic performance concept of sustainable development of the library will have far-reaching significance. From the perspective of strategic management strategy to organizational strategy formation and implementation process of all management in the industry has formed three different theories, that competition as the core of basic competitive strategies to resources as the core strategic core competencies, customer the core of the Blue Ocean strategy. Three kinds of integration of strategic management will take into account the organizational processes, resources, and customer value, providing a comprehensive concept of organizational strategic performance system for building strategic performance evaluation system library system provides a theoretical basis.

## 1. The definition of core concepts

### 1.1 Strategic management theory

1938 American economist Chester Barnard in "operator functions," a book analyzing the organization strategic factors integrated system for the first time the introduction of strategic organizational strategy management theory and practice. The so-called strategic management refers to the strategy formulation and implementation process management. In 1962, the famous American management scholars Chandler published "Strategy and Structure," a book, a prelude to corporate strategic management theory, in which he analyzes the relationship between environment, strategy and organizational structures, but have the strategy should adapt to environmental changes in order to meet market demand, the organizational structure should be adapted to the requirements of the strategy. With the development of strategic management theory, strategic management focus on how to make full use of limited resources to meet customer needs in a competitive external environment, realize the value of innovation. Competition, resources, customer three elements become the core of strategic management, whereby the formation of three different strategic management theory.

## **1.2 Library performance evaluation**

As early as the 1970s, European and American mainstream library community began to carry out the theory and practice of library performance evaluation, library performance assessment also immediately spread the word in the library community, in English, usually with "Performance appraisal "," performance evaluation "," performance Measurement "," performance Assessing "these four words to express the performance evaluation, and then in between these words with the corresponding attribute" Library "has become the library performance evaluation. Each library community of scholars and organizations has also begun to focus on library performance evaluation, we put forward their own definition of representative view of the following: definition of the International Organization for Standardization is: effectiveness of library services or equipment, efficiency use and adapt degree evaluation program. Efficiency refers to the degree of completion of objectives, efficiency refers to the completion of the stated objectives of the conditions, the use of resources, and that is, minimal use of resources is called efficient. Paul B. Kantor definition of library performance evaluation are: the operating definition of objectives is the performance evaluation, usually provide information in digital form, is part of a feedback effectively manage demand for library performance evaluation we are not dealing with library activities quality is the number of library activities.

## **2. The analysis to the value innovation of library readers**

Readers emphasize the value of innovation and value the needs of readers, the library requires good at exploring the potential needs of readers and creating new demand to meet readers' value, in accordance with the money King and Tyrrhenian Mauborgne Blue Ocean Strategy shaping a new value of the "excluded - reduce - increase - to create a "four-step action framework, the following analysis of innovation.

### **2.1 Excluding**

Excluding information services or long-term competitiveness of the libraries comparisons elements, these elements are often taken for granted in the library community, but careful analysis has found that these elements no longer has value to the reader, and even reduce the value, forcing libraries to analyze the reader has lost valuable resource or service. Reduce to view the library of existing resources or services on the design function are overdone. In this case, the need to examine certain library service or resource is not exceeded readers required, because these extra resources or services only adding to library costs.

### **2.2 Increase**

Examine the content of the library which elements should be increased in order to enhance the value of the reader. To meet this challenge Google and other search engines, in order to better serve the readers, the library should strengthen the construction characteristics of the collection, such as Fujian Normal University to strengthen the collection of ancient literature, Fuzhou University emphasized the finishing chemical document. In addition to the long-term preservation of digital resources, organization and network information is also need to strengthen and increase the current library elements.

### **2.3 Creation**

In order to meet the demand or create new readers, libraries need to create those elements never before. Such as the rise of the Foreign Libraries "Living Library" events, the traditional readers borrowed "book" by the "people" to act, this "man" as a book to lend way for readers to create an open, independent, exchange environment.

Overall, the first two four-step action framework which eliminate and reduce costs is to reduce the library, then that is a two-step increase and create in order to create the reader needs to enhance

its value.

### **3. The analysis to the library external environment**

Analysis of the external environment is conducive to the Library discover the opportunities and challenges they face, understand their own strengths and weaknesses, so that the library at the time of strategic analysis can avoid weaknesses, to find their own reasonable position. Famous American management guru Michael Porter (Michael E · Porter) noted that exist in the industry five forces affecting the competitiveness of the organization, namely, competition, suppliers, buyers, potential entrants, substitutes within the industry. Libraries in the competition also face the threat of these five forces in the analysis and strategy development, it should be a comprehensive analysis of five forces.

#### **3.1 Competitor**

For a long time, the library as a national public service organizations, the competition out of the question, but with the social demands for library services is increasing, adding relevant assessment grading carry out the work, and other information services, competition in the book between the museum and will be intensified between the library and other information services. ① Competition between libraries. Has always been based on cooperation between the libraries are the mainstream, such as to carry out interlibrary loan, library alliance to enhance the sharing of resources between libraries. Over time, different library services the ability to form a gap: Some libraries because of its rich resources, with technology, management, personnel and other advantages, has attracted many readers, for various reasons, some poor service capabilities library readers rarely. ② Competition between the library and other business information agency. In recent years, with the rapid development of business information agency, the library is no longer the only place to get information, the user will be free to select the service according to their needs. Therefore, how to attract more users to the library this site up, the competition between the library and for-profit commercial institutions opened. Such as various types of information center, the intelligence, information consultancy, network information providers, those services on a commercial mode of operation, with its abundant capital, can provide users with convenient, efficient, and highly targeted services, in the face challenge for these businesses, and how to compete successfully in the library, the library is worth to ponder.

#### **3.2 Supplier**

According to Porter's value chain theory, suppliers upstream in the value chain, providing the resources needed for production and business activities, it has to raise prices or reduce service quality and other resources and procurement bargaining power to put pressure on the downstream business. Library suppliers include various publishing houses, journals, newspapers, database providers, optical companies. First of all, these suppliers by virtue of its advantages in resources continue to raise the price of their products, the formation of a library due to its dependence, had to compromise, textbook funding increases every year but still keep up with rising prices, which undoubtedly reduced the library purchasing power. Second, these vendors face the user direct marketing, resulting in the loss of library users, as we know China How Net (CNKI), Superstar Digital Library to individuals or groups to provide a membership card, a membership card as long as you can buy it download their books, papers and so on. Finally, these suppliers by virtue of its technological advantages continue to propose restrictions on the library.

#### **3.3 Library users**

The user is at the heart of library work, they determine the survival and development of the library, therefore, an analysis of library users is particularly important. Information user behavior changes, development of network technology is quietly changing the behavior of library users' access to information, more and more people are used to obtain the required information from the network,

and the library is no longer a people to acquire knowledge and the preferred manner of information. User needs increasingly diverse, increasingly high expectations. User community library services are diverse, there is research, entertainment and leisure as well as business users, etc. These different types of users, not necessarily the same hierarchy of needs, such as research user wishes to obtain in-depth information, entertainment want to get the type of shallow, recreational information, business users want to get specific, deep processed information, how to meet the diverse information needs of users, that is a major challenge faced by libraries.

### **3.4 Potential entrants**

Porter noted that refers to potential entrants into the industry may at any time become a rival company, it will break the existing balance within the industry. Libraries industry potential entrants to join, will result in redistribution of library users, the library has created a significant threat. The network of information providers and Internet content providers ICA ICP majority of Internet users to browse the Internet and other services via the Internet, with its convenient, novelty attracted a lot of library users. In addition, some private bookstores through a series of services, such as reader services, academic seminars, purchase books and other telephone services, also attracted a lot of the user's eye.

### **3.5 Alternatives**

Alternatives tend to gain competitive advantage through lower prices and more convenient access to information. With the development of the network, users face a variety of choices, many libraries will face the threat of substitution of information services. Some online bookstore, such as Dangdang, Amazon, users can not only through these online bookstore convenient accesses to books such as home delivery, you can also enjoy preferential services, such as books and discounts.

## **4. The analysis to the internal resources library**

Library core competence is currently no unified concept of the so-called eyes of the beholder, the wise sees wisdom, but many views are united in a basic feature that is the core competitiveness of the library is unique, inimitable, bring the library to give sustained Competitive Advantage. Sustained core competitive advantage is to adapt to the needs of readers, to provide satisfactory services to meet the needs of the reader through the resources, human, institutional capacity, integrated management and a series of elements realized, simply because the resources are static , it cannot play its proper advantage, namely librarians need manpower to carry and provide, at the same time to meet the proposed requirements linked the process itself requires systems to support, manage to coordinate, to protect cultural services to fulfill. I believe that the library core competence is the long form of the library, the library enables to obtain a competitive advantage, to ensure the sustainable development of the various elements of the library resources, technology, culture, management and other aggregates. Therefore, the ability to shape the core of the library should be in-depth analysis of various elements of the library resources, technology, culture, management.

### **4.1 Resource analysis**

Resources include information and human resources. Construction of Library Information Resources directly affect the level of library service, and therefore the analysis of information resources from both quantity and quality aspects. The number of information resources to achieve a certain scale, to ensure "supply and demand balance" of resources, quality to focus on priorities and characteristics of resources, the formation of special collections, while the depth of resources should be carried out in-depth analysis, whether the resource for a certain consolidation, different levels to meet individual needs. Human Resource That librarians is to create and load-bearing capacity of the core body, the human resources staff to conduct a comprehensive analysis of its structure, the basic quality, professional ability overall quality.

## 4.2 Technical analysis

Technology was developed by a series of patents, know-how, equipment, technical specifications of the system composition. It includes the coordination of hardware and software system, the core technology as a form of technical resources. Libraries are the key technical level of competitive advantage, and therefore the entire process of library information services namely information collection, organization, dissemination, storage, use of the technology involved should be analyzed to extract information such as information collection process mining technology, information technology organization, integration of information technology, long-term preservation of technical resources.

## 4.3 Culture analysis

Libraries organizational culture is shared values long-established library staff, a code of conduct. Library Culture in the heads of each librarian should influence the behavior of each person, a rallying point, cohesion, guide force with a library culture can motivate employees to achieve the goals library proactive, hard work and enables library staff have a sense of belonging and pride. Analysis of library culture to focus its analysis of whether the emphasis on people-oriented continuous learning innovation, teamwork three areas. Because more people-oriented concept from the perspective of readers and librarians, library staff can inspire enthusiasm, In addition, the library should adapt to the changing environment, we must continue to learn and innovate in order to obtain a lasting advantage and rely on the team spirit, collective efforts to achieve the target library.

## 4.4 Library management system analysis

Library management is composed of a series of management, incentives, organizational culture formation and learning mechanisms of organic aggregates. A scientific management system to effectively centralize and coordinate the various decentralized manpower and resources, to play the overall advantages of the library. Analysis of library management system to deal with its management, incentives, cultural formation and organizational learning in four areas for analysis. Management should be innovative and flexible in order to reassemble the environment changes resources to achieve the benefits of innovation, the incentive to break on level distribution system, the contribution allocated according to individual, and strive to fair and impartial, culture formed to highlight the energy of this management philosophy, organizational structure to establish a flexible network structure, in order to change the user to make a quick response. In short, the core capacity of libraries, resources are not static, nor is it a dynamic and flexible librarians, do more than just unique museum concept. Resource Library formation requires core competencies as a basis for the unique idea to run a library, excellent library and a series of regulations to support cultural, scientific management system to ensure high-quality library personnel to achieve this series feature integration with overall advantage to play, the library formed a unique, inimitable, sustainable competitive advantage. Therefore, the analysis of library internal resources and capabilities, in-depth analysis of the elements combined with each other as well as the integration advantages of the formation.

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## Researching on the Development Strategy of the Ice and Snow Sports Tourism Industry in Heilongjiang Province

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**Keywords:** Heilongjiang Province; Ice and snow sports; Tourist industry; Development; Researching.

**Abstract.** Heilongjiang province is located in the northern part of our country, which has a unique snow and ice sports tourism environment. But with the rise of the ice and snow sports tourism project, the capital economic circle, Liaoning Province, Jilin Province and other places caused a huge impact for the development of ice and snow sports tourism industry for heilongjiang province. Ice snow sports tourism industry as one of the pillar industries of our province's economic development. In the face of the impact must be a clear understanding of reality, look at themselves, through the shackles of their own development issues, to find the right to promote the development of sports industry in our province.

### 1. Introduction

With the continuous development of China's economy and the continuous improvement of people's living standards, people's demand for health has become more and more strong. Ice and snow sports project as a unique sport in northern China, has get more and more people's recognition and became one of the main content of people's leisure and entertainment. Heilongjiang Province, as China's northernmost Province, has 4-5 months of snowing annually, a large amount of snow, good snow quality, this richly endowed by nature natural resources make Heilongjiang province become China's snow tourism center, by domestic and foreign travel enthusiasts of all ages. And on the basis of the ice and snow tourism, the establishment of the ice sports tourism project is a collection of leisure, entertainment, fitness and in one, is a new economic growth point in Heilongjiang province. Ice and snow sports tourism industry has become Heilongjiang province to show their windows to the world, so that people have a new understanding of the beautiful Heilongjiang. However, with the increasing popularity of the ice and snow tourism projects and the participation of the increasing degree, all over the country have the conditions of the region began to vigorously develop the snow sports tourism related industries, In particular, Jilin, Liaoning two provinces, in recent years, the ice sports tourism industry has been a huge development, has been a strong threat to the ice and snow tourism industry in Heilongjiang province. Therefore, deep study on the characteristics and status quot of the ice sports tourism industry in Heilongjiang Province, and then the rectification problem, retain the advantage, without delay. This paper focuses on the ice and snow tourism industry in Heilongjiang province development situation and the lack of analysis, put forward to promote the healthy development of sports tourism industry in Heilongjiang province and constructive measures, to promote the rapid development of tourism projects in Heilongjiang Province health.

## **2. Development status of ice and snow sports tourism industry in Heilongjiang Province**

### **2.1 The disadvantage of geographical position**

Heilongjiang province is located in China's northernmost, has incomparable advantages in climate conditions, but is not irreplaceable advantages. First of all, the North China ice and snow resources area is located in Beijing and Zhangjiakou area. Because of the geographical advantages of the capital economic circle, improve the facilities, for the tourist population has a huge attraction. In addition, the same as located in Northeast of China's Liaoning Province, Jilin province also has the advantage of the climate suitability of the ice snow sports industry development, so many lovers of ice and snow on the way to Heilongjiang by Liaoning province and Jilin province are retained, which led to the domestic ice snow tourism enthusiasts are shunted to Heilongjiang ice and snow tourism population was severely reduced. Therefore, in accordance with the previous development model of ice and snow tourism, still with the traditional ice and snow projects, such as skiing, ice skating and other large-scale expansion mode, has been unable to meet the needs of the current fierce market competition situation.

### **2.2 Lack of market economy, the concept of sustainable development is weak**

The development and management of Heilongjiang province winter sports tourism resources for the government behavior, combined with the market is not close, the lack of deep research and analysis system of domestic sports tourism market, a lot of cultural connotation of the winter sports tourism resources are still idle. Due to the lack of professional management to develop the winter sports tourism resources cannot be flexible and effective mode of operation to meet the needs of the market, not the potential winter sports tourism resources to attract tourists should improve economic and social benefits. The concept of sustainability in Heilongjiang province. The lack of winter sports tourism resources development and utilization in the process. The snow is a very unique sports tourism resource. The development of value is very high, but the development of the project is still in the snow and ice resources stage, winter sports tourism projects lack of new, strange, cultural taste and personality. Because of the lack of attraction. The overall strategic planning of sustainable use of repeated construction of the low standard of too much is not conducive to the winter sports tourism resources.

### **2.3 Multi head management, lack of overall planning and design**

Because the ice snow sports industry has already formed the scale and has great economic value, so they formed a bull management situation. It is due to multiple management, decentralization, not the dominant force, leading to the lack of design the overall development plan. Take the Yabuli ski resort as an example: Yabuli ski resort is Heilongjiang skiing is an important pillar of brand of Heilongjiang ice and snow sports tourism development, But in the management system, the use of land resources management of forest tourism resources development Yabuli forest, owned by Provincial Sports Bureau, the tourism guide to the Tourism Bureau, compartmentalization, each playing each card, as the article, lack of overall coordination, serious internal friction, this is an important reason for the slow development of Yabuli ski resort. In Jilin Province, established the first deputy departmental level units "Changbai Mountain ice and snow tourism group, to co-ordinate Changbai Mountain ice and snow tourism development, construction and management, and open financial accounts, direct investment, effective solution to the various departments coordination and management problems.

### **2.4 Ice and snow tourism products lack of local characteristics**

Heilongjiang province has no superior geographical position, which is a big disadvantage. But it is also the disadvantage that has created another advantage in Heilongjiang province. Unique climate conditions in Heilongjiang Province, the unique historical environment, unique snow tourism atmosphere are the main characteristics which are different from other provinces in Heilongjiang Province, But the Heilongjiang ice and snow tourism products lack of local characteristics, there will

be regional and historical culture with snow tourism product project, visual fatigue caused by tourists, the impact of long-term development to the Heilongjiang ice and snow tourism. On the current situation, the Heilongjiang ice products depend too much on the international ice industry style, the lack of independent innovation products, are presented the local culture, and so tourist's enthusiasm did not meet the tour product quality are greatly weakened.

### **3. Strategy of ice and snow tourism development in Heilongjiang Province**

#### **3.1 Strengthen the market main body, broaden the sources of funds**

Increasing government investment is the most effective means to broaden the tourism industry of Heilongjiang province. However, the government investment is a planned economy, although direct and effective, but it will give the government a great pressure, for economically less developed areas, it is even more so. Therefore, Heilongjiang Province, ice and snow sports tourism industry should also take the market as the main body. Through the establishment of a reasonable, effective and attractive system, guiding the market to rationalize the allocation of resources. Through the advantages of policy and resources to attract funds, and thus broaden the sources of funding.

#### **3.2 Strive to create the tourism brand effect**

Snow sports tourism industry as a new industry is not a unique sports industry in Heilongjiang Province, but the ice and snow in Heilongjiang is unique. So want to develop the characteristics of the tourism industry must grasp the brand advantage to do a good job of publicity and promotion, so as to attract more tourists, to create tourism brand effect. Heilongjiang province has the inherent advantages of the development of ice and snow tourism, rich in natural resources, which can be used as the basis for brand promotion and content. At present, the Heilongjiang ice and snow tourism development should intensify propaganda and establish the brand, the ice and snow sports tourism project in Heilongjiang province and the unique area, combining history, Heilongjiang province to build the unique characteristics of ice and snow sports tourism, let more people understand Heilongjiang, understand the ice snow sports tourism, through public propaganda to spread the brand, and then get a good reputation in the market.

#### **3.3 Undertaking the high level events and promoting the sustainable development of sports ice and snow tourism**

The high level sports can not only improve the competitive level, from the economic point of tourism, can form a race to watch tourism as the core, to the tourism service huge competition system to obtain huge economic benefits. 1992 Barcelona Olympic Games for 30 million inbound tourists, tourism revenue amounted to more than 30 billion. 2000, the Sydney Olympic Games tourism revenue reached \$3 billion 600 million. Because of the great role in promoting high level sports competition of the sports tourism of the Olympic Games. The international competition like the World Cup football match held in various countries competing to become the object. Therefore, in the development of winter sports tourism at the same time, enhance the public awareness of sports; improve the sports level, the high level of winter sports competitions, and the combination of sports the ice and snow tourism and sports competition perfect, to promote the sustainable development of winter sports tourism for the purpose.

#### **3.4 Attaching importance to the construction of infrastructure and improving the quality of service**

Convenient transportation, developed communication facilities and accommodation conditions are the most important infrastructure for the development of tourism. According to the concept of market economy, in accordance with the principles of who invest, who benefit, the government should strengthen policy support to encourage the formation of a diversified investment and open pattern, and thus broaden the sources of funding. In this way, through the rational allocation of the market, to

strengthen the construction of tourism infrastructure, and thus attract more investment and consumption, the formation of a sound economic operation mechanism. At the same time, the service quality and quality of the service quality of the ice sports tourism related industries are strictly trained, improve the quality of service, so that visitors can be satisfied with the return, which will attract more tourists to come to travel.

### **3.5 Strengthen the training of professional talents, and formulate the measures for the protection of talents**

The ice and snow sports project has been the dominant project in Heilongjiang Province, so the Heilongjiang province has a good foundation for the cultivation of the sports industry of ice and snow. Especially in the province of various sports colleges and universities, the ice sports industry research and personnel training has been at the forefront of the country. But with the development of market economy, many talents are poached by other provinces. They take away not only the snow sports tourism industry related knowledge, but also took away the Heilongjiang province after many years before the formation of the ice and snow sports industry advantage. Therefore, we increase the cultivation of talents at the same time, should greatly improve the professional treatment, to prevent the existing snow sports tourism management talents, the development of sports tourism industry and walk on the road of innovation and characteristics, and effectively promote our province of ice and snow sports tourism industry to develop in depth.

## **4. Acknowledgment**

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# **An Experimental Research on the Effect of Cooperative Learning on College Students' Interpersonal Relationship in College Physical Education Classes**

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**Keywords:** Cooperative learning; College students; Interpersonal relationship; Physical education.

**Abstract.** This study tries to explore the effect of cooperative learning on college students' interpersonal relationship in college physical education classes. Methods: randomly selected two classes of first-year undergraduate students in Beijing Normal University who studying physical education lessons, one is the experimental class with 30 persons taking 16 weeks experiment, the other is the control class with 30 persons using conventional learning mode. Conclusion: Cooperative learning can make college students' interpersonal situation improved significantly.

## **1. Introduction**

Interpersonal communication is one of the main factors that affect the mental health of college students. In sports teaching, the communication and cooperation between teachers and students are far more than other classroom teaching, which provides a lot of opportunities for the establishment of good interpersonal relationships. Therefore, how to improve the level of interpersonal communication in PE teaching will undoubtedly become an important subject for the majority of sports workers in the new century. Cooperative learning is a creative and effective teaching theory and strategy system adopted by many countries in the world. It is also one of the learning methods advocated by the new curriculum reform. It is based on the study group as the basic organizational form and the group performance as the evaluation criteria, the teachers and students especially the interaction between students learning together to achieve the teaching target. Therefore, this study will combine the experimental teaching intervention of cooperative learning in college physical education, discuss the influence on the interpersonal relationship of college students, and accumulate material for the further study of the relationship between PE teaching methods and students' mental health, and provide reference for the reform of college PE teaching methods.

## **2. Research methods**

### **2.1 Object**

Randomly selected first-year undergraduate students in Beijing Normal University, two public physical education classes, the experimental class with 30 students and the control class with 30 students. Before experiment the two classes took homogeneity test.

### **2.2 Research tools**

In this study, using one measuring instruments: The college students interpersonal comprehensive Diagnostic Scale (Richang Zheng).

## **2.3 Experimental implementation of the program**

### *2.3.1 Experimental time and variable control*

In this study, a 16-week teaching experiment took with exactly the same level of experimental classes and control classes of teachers, teaching content, teaching schedule, assessment methods. Control classes in accordance with conventional teaching methods and teaching, experimental class with cooperative learning.

### *2.3.2 Implementation of cooperative learning mode*

#### *2.3.2.1 Grouping*

30 students were divided into six groups, five students in each group. The members of the group remain unchanged during the whole experiment. Each team member to assume a certain role in the group, and to make them capable of interdependence, mutual promotion, and take some responsibility to actively contribute to the common goal of the team.

According to the needs of the teaching content, team members in the cooperative learning assume different roles. The five kinds of roles:

1) Organizers. Responsible for organizing refresher on lesson content, and practice new teaching content;

2) Observers. Responsible for technical review and all members of the practice in the observation group action, and gives the error correction prompts;

3) Referee. Teaching team contest judge responsible for the work, if the referee any unfair behavior, the team cannot give any reward;

4) Recorder. Responsible for group activities, group and team members access to the records and statistics of the reward situation;

5) Summarizer. Organizational groups in the class before the lesson exercises and team members collaborate with each other, communication discuss and summarize the discussion, of praise good experience, shared with other groups in the teacher after class summary.

Members role of changes once every two weeks in the 16 weeks of the experiment, as much as possible so that each member of the rotation of the office all the roles.

#### *2.3.2.2 Teaching cooperation skills*

In the present study, the teachers while teaching expertise, but also to teach students cooperation skills. Good cooperation skills not only enable students to better collaboration and communication, thereby increasing the effectiveness of group learning and improving students' interpersonal skills and social adaptability.

#### *2.3.2.3 Incentives*

Experimental class to achieve mutual collaboration, common learning better teaching objectives rated "excellent" group and individual awards. The results of each lesson registration given scores extra points in the final statistics. Teaching teachers should be given more accurate and appropriate verbal praise and encourage group students encouraging each other.

#### *2.3.2.4 Experimental monitoring, regulation and feedback*

In this study, two semi-structured interviews took in the beginning of the experiment and at the end of once to understand the feelings of the students' understanding of the lesson and class.

In addition, the process of group activities monitoring and regulation, as well as the result of feedback given to group activities, to ensure the quality of cooperative learning. Teachers are familiar with each team, and be aware of the advantages and disadvantages of the various members, and regulating the activities of the various groups in a targeted manner.

Monitoring of group activities through interviews, results feedback, discover the problems students grasp the activity time to master the process direction, to understand the students' attitude, if necessary, make the appropriate adjustments to ensure that the effect of cooperative learning.

#### *2.3.2.5 Evaluation methods*

The evaluation of this study include both academic evaluation, also include the evaluation of the learning process that is cooperative group activities; including teacher evaluation, also include student self-assessment.

## 2.4 Statistical methods

The statistical collation and analysis use the SPSS 10.0 software on the experimentally measured data.

## 3. Results and analysis

### 3.1 Homogeneity analysis before the experiment

As can be seen from Table 1, there are no significant difference on the students' interpersonal score between the control group and the experimental group before the experiment.

Tab.1.T test results of the control group and the experimental group

	Control group		Experimental group		<i>t</i>	<i>P</i>
	M	SD	M	SD		
Interpersonal-relationships	2.39	6.21	2.40	6.12	0.63	0.53

### 3.2 Comparison of the results between the experimental class and the control class in the interpersonal relationship

#### 3.2.1 Comparison of the results of the experimental class before and after the experiment in the interpersonal relationship

Tab.2.The experimental group interpersonal score and its four dimensions (after the experiment - before the experiment) t-test scores

Dimension	Before the experiment		After the experiment		<i>t</i>	<i>P</i>
	M	SD	M	SD		
conversation	0.45	1.56	-0.32	1.31	-2.21	0.012*
communication	0.81	2.08	-1.02	1.84	-3.53	0.001**
interpersonal	0.59	1.65	-0.38	1.08	-2.58	0.013*
intercourse with opposite sex	0.62	1.55	-0.41	1.17	-2.89	0.004**
the total score of Interpersonal Score	2.40	6.12	-2.12	3.79	-3.45	0.001**

\*\*P<0.01, \*P<0.05

As can be seen from Table 2, there are significant differences on the students' interpersonal score of the experimental class before and after the experiment. All aspects of interpersonal relationship in the experimental group were improved after the experiment.

#### 3.2.2 Comparison of the results of the experimental class and the control students after the experiment in interpersonal relationship

Tab.3.The control group and the experimental group interpersonal score and its four dimensions (after the experiment - before the experiment) t-test scores

Dimension	Control group		Experimental group		<i>t</i>	<i>P</i>
	M	SD	M	SD		
conversation	0.37	1.580	-0.33	1.32	-1.91	0.063
communication	0.83	2.07	-1.00	1.82	-3.51	0.001**
interpersonal	0.58	1.63	-0.37	1.08	-2.58	0.013*
intercourse with opposite sex	0.61	1.56	-0.43	1.17	-2.91	0.005**

the total score of Interpersonal Score 2.39 6.11 -2.13 3.76 -3.41 0.001\*\*

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\*\*P<0.01, \*P<0.05

As can be seen from Table 3, there are significant differences on the students' interpersonal score between the experimental class and the control class before and after the experiment. After the experiment, the students in the experimental class had significantly improved compared with the control group in four dimensions.

### 3.3 Physical experiments before and after comparative analysis of the results of interviews

During the experiment, the subjects conducted two semi-structured interviews. In the interview, some students mentioned that cooperative learning is very good. Some students said that they fear getting along with the other people before, but after physical education, they found get along with the other students is not a difficult thing. Other students said that in the physical education, through cooperative learning, the ability to interact has been further strengthened.

## 4. Conclusions and recommendations

### 4.1 Conclusion

After the experiment, the students in the experimental class had a significant improvement in interpersonal communication. It shows that cooperative learning can improve the interpersonal relationship in college PE teaching.

### 4.2 Suggestion

In the future sports teaching practice work, teachers should be good at creating students' cooperative learning atmosphere and conditions, the physical education learning, not only grasp the sports knowledge, technology and skills, but also in the pleasant environment to cultivate mind, cultivate the ability to get along with people, improve the level of interpersonal relationship. Cooperative learning has put forward higher requirements on the quality of teachers. Therefore, it is recommended that teachers should not only master the relevant skills and teaching methods of physical education, but also to understand and master the advanced teaching ideas, teaching theories, and constantly improve their own quality and ability.

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## Preliminary Study on the Private College's Wisdom Education Model

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**Keywords:** Wisdom education mode; Building codes.

**Abstract.** In information environment teaching methods, teaching mode and personnel training model must request continuing innovation. Especially for private colleges who attract students relying on reputation and professional characteristics. It is particularly urgent for them to develop wisdom education mode (WEM). Based on the connotation definition of wisdom education pattern, the significance and necessity to build wisdom education model for private colleges is stated in this paper. Taking "Building Code" for example, the building contents and practice of the WEM of private colleges is described too. The application of the WEM in "Building Codes" course has achieved good teaching results, which is the future good foundation for private colleges on forming professional characteristics and on the student's personality, intelligence learning.

### 1. Introduction

It is indicated by <<National Long-term Education Reform and Development Plan (2010 - 2020) of China >> that "Information technology has revolutionized impact on education, must be highly valued." <<Decade of Education Informatization Development Plan (2011-2020) of China>> also emphasized that "full playing to the unique advantages of modern information technology, students enhance self-learning ability obviously in the information environment. The innovations of teaching methods and education model move forward. Information promotes educational reform fully apparent". "Information of vocational education is support to train highly qualified workers and skilled personnel, and is weak links in education information needing to focus on strengthening". It also indicated that "speeding up the digital transformation of curriculum and professional, innovating the teaching and learning modes of information technology, improving the level of personalized interactive teaching, innovating the training model, and improving the quality of personnel training". Thus, wisdom education (WE) [1] has come into being in the advanced development stage of digital education that is supported by the networking, cloud computing, large data wireless communications and other new generation of information technology.

At the same time, <<National Long-term Education Reform and Development Plan (2010 - 2020) of China>> also stressed that "Private education is an important growth point for educational development, and is an important force to promote education reform." "Supporting private schools to innovate institutional mechanisms and the education mode, to improve quality, to be unique. Running a number of high-level private schools." Professional characteristics is an important manifestation of the school characteristics of private university, is the basis for private colleges and universities to attract students and to form of social status, is the important way for private colleges and universities

to shape the school image and to improve visibility, is the key factor of survival and development, and is the important indicator to measure their school level and personnel training type. Professional characteristics are a key factor to determine the competitiveness of professional education field [2].

In summary, the study on constructing the wisdom education model (WEM) of curriculum of private colleges is required trend to reform traditional education mode in information era. It is also urgently need for private universities to the sustainable development of, and to train for social applications, complex, and skilled personnel.

## **2. Connotation of WEM**

In 2006, Professor Warren Simmons of Brown University proposed the vision of wisdom educational systems to solve two important challenges. One is the unsustainable development in American city education, and another is that the training of student knowledge and skills cannot cater to the needs of economic and social development. From three aspects of the “wisdom”, “education” and “system”, Simmons noted that WE should be flexible and self-adapting, should pay full attention to the service function of education system, and should be more emphasis on the system participation of community, schools, parents and other members [3]. Professor Z.T. Zhu said [4]: “WE is the new realm of education information technology, its basic meaning is constructed through the wisdom of learning environment, by using wisdom pedagogy, by promoting learners learn wisdom, and by finally enhancing the desired talent.” In addition, the South Korean government who is in forefront of wisdom educational research issued the “Wisdom Education Promotion Strategy”, in the hope of the education intelligent development, to solve some problems such as low enthusiasm of students, lack of creativity and learning autonomy, as well as the lack of personalized learning school system, etc. It is to training the global leader in the younger generation with learning feature of 21st century. The “Strategy” clearly states WE is an intelligent, adaptive teaching system. It can meet demands of the 21st century knowledge society on pedagogy, curriculum, assessment, teachers, etc. Learning model is an integration of the society learning and adaptive learning in a good information environment [5].

In summary, WE aims the efficient integration of learning resources of national, social and school through smart technology devices and equipment. It emphasize on the active participation of social, school and parents. With the wisdom teaching methods of the teachers, for every student, it provides a more comprehensive learning support services. Therefore, in this paper the WEM connotation is that through the support of intelligent information technology of networking, cloud computing, big data and wireless broadband networks, through the immersive participation of society, schools and parents and other stakeholder, through the integration of learning resources of national, social and school, with the wisdom teaching means and methods of teachers, personalized, intelligent learning environment is created for learners, thus the education system of multiple intellectual development of students is contributed, and the ultimate target of training applications, complex and skilled personnel for social is realized finally.

## **3. Meaning of WEM construction**

With the development of modern information technology, more and more people are realizing that through WE, today, modern educational technology is rapidly penetrated into all areas based on as the core of education multimedia technology and network technology, which gives the teaching of private colleges great opportunities and challenges. Unlike public institutions, Private colleges must rely on their own school characteristics, school quality and reputation and so fend for themselves. Therefore, the study on WEM construction of private college is not only the needing trend to reform traditional education mode in information era, but also the need of sustainable development of private colleges. Architecture professional as a specialty professional of Zhengzhou Institute of Finance and Economics, for both the required internal development and the trend of external situation, has an urgent need for reform and innovation. It is particularly meaningful to research construct its WEM.

At present, architecture professionals in our institute has the following characteristics: ①The institute target of architecture professional training is "high quality skilled personnel"; ② The professional teaching content is older. The teaching mode is traditional. The teaching effect is not obvious. The knowledge and skills learned by student have a big gap compared to the needs of society; ③ Based on the statistical analysis of past five years on architecture students' family, about 30 percent parents of students of architecture professionals are in the construction-related industries; ④Architecture professionals as a institute specialty, its students of every year are maintained at about 1,200 people. Its courses set reasonable. Its teaching resources are more comprehensive and complete. Therefore, the WEM construction of architecture professional courses of our institute can not only play in the reform effect of point to an area, but also provide a reference for the construction of the wisdom course and wisdom campus. In the future it is more likely, more efficient in bringing the integration between technology and curriculum, teaching. Ultimately the purpose of WE can be achieved.

#### 4. Content of WEM construction and its preliminary application

Based on the study on the developing demand of private college and on the characteristics of architecture professional course, intended to take the wisdom learning activity as the core, through using the means of information cloud platforms (such as micro-channel, study groups, work groups, campus communication, etc.), the Interaction and cooperation are connected in schools managers, parents, teachers and students. Through the teaching models of micro lesson + e-book package + courses + flipped classroom and other, using online evaluation and feedback mechanisms, the WEM of architecture professional course of private colleges could be constructed. The main contents of WEM in this paper are shown in Fig. 1.

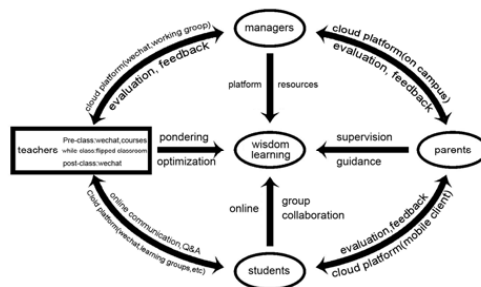


Fig.1.Studying content of WEM of architecture course of private colleges

In this paper, Taking the “Building Code” course for example, the specific application of the above WE is described in detail. The "Building Code" a required course in the project supervision, project cost and construction technology professions in our institute. Its main feature is ① interdisciplinary, more content; ② strong theoretical knowledge, but it is combined closely with the engineering practice; ③ strong curriculum policy, and limited hours. In the traditional teaching model teaching, the students pay high attention, but they have low motivation, poor learning outcomes. In this paper, WEM is attempted to apply to the “Building Code” course. At the same time, assessment methods for students are reformed, namely: Final student achievement test scores = 50% usually scores (attendance + group performance + completing task, the group scoring, and teacher approval) + 50% exam scores. Specific mode application process is shown in the Table 1. Their result appraisal is shown in the Table 2. Comparative analysis between the students of project cost profession of 2008-2012 who did not accept the wisdom of education and the 2013 students of the same profession

who accepted WE. In selecting class, the counselor, class number, the course (“Building Code”) and classroom teacher are the same. During statistical analysis the numbers are averaged.

Tab.1.List of WEM of “Building Code”

Teaching Content	Teaching process	teaching objectives
Basic legal knowledge of architectural engineering	Pre-class: Micro letter (flow chart of construction approval, assignment: Students find the relationship between the map and textbook contents)	Master content and applications of approval flowchart of architectural Engineering, master the basic concepts of "Building Code" course
	While-class: Answer question (A&Q) of construction approval flowchart; Combined with "building codes" important concepts, assign the task group, the students play teacher's role to explain important concepts and A&Q	
	Post-class: Combined with the school construction process, students discuss specific application of "Building Code" in construction with teachers and parents	
Legal system of urban and rural planning	Pre-class: Group share micro lessons (Town and Country Planning of Zhengzhou City)	Familiar with important knowledge of "legal system of urban and rural planning" and master their application in specific project
	While-class: A&Q of micro lessons; explain the important points of "legal system of urban and rural planning"; click on Urban and Rural Planning Bureau of Zhengzhou, Henan Housing and Urban Construction Department website; describes the project approval process and apply for building permits related; assign students to simulate task administrative examination and approval of specific projects, and post-grant administrative license, management license	
	After-school: Visit and understand the functions of the office windows of Zhengzhou Urban and Rural Planning Bureau; After the visit, discuss harvesting and doubts with teachers, parents.	
Bidding Law System of Construction Engineering	Pre-class: micro-video (bidding process)	Master the bidding process of construction projects
	While-class: A&Q of micro Video; explain the important points of "Construction Engineering Bidding Law"; students simulate specific project tender bid and submit bid	
	Post-class: Invite parents with bidding experience explain online details of construction bidding activities and A&Q	
Contract System of Construction Engineering	Pre-class: micro-channel (Model of Construction Contract)	Master the key elements of the legal system of construction contracts and its application
	While-class: A&Q for micro-channel; Play contract dispute video of construction engineering; different groups discuss details of attention to concluding construction , including its works contracts, performance and changes	
	Post-class:Students think about their own future application of contract law system in the construction	
Relevant laws and regulations and common engineering disputes	Pre-class: micro-video (engineering disputes)	Familiar with common engineering disputes and application of relevant laws and regulations
	While-class: invite experienced parents to explain the common engineering content and dispute settlement, and A&Q	
	Post-class: Students share their harvesting and questions in lecture with teachers and parents online	
Summary	Throughout the teaching process of the course, school offers resources of Wi-Fi, teaching platform and library. Teachers guide and inspire students to be familiar with theory knowledge, guide students to carry out practical activities. Students work cooperatively, communicate with each other, observe, practice, analyze and sum up. They not only master the theoretical knowledge, have a certain amount of practice, innovation ability, but also enhance their own professional ethics and social responsibility. Through online communication and on-site seminars, parents not only understand their children's study, school management and teacher teaching, etc., but also update the student's learning content	Achieve learning goals of knowledge and skills training target

Tab.2.Student degree of receiving WE

Evaluation Content		Evaluated target and evaluation results	
		students that do not accept WE	students that accept the WE
Attendance (%)		85	99
Learning Activity (rate of student playing phone (%))		65	30
Curricular activities participation (%)		20	70
Hands-on practice and participation (%)		Undeveloped	70
Test scores	90 points or more (%)	8	15
	Pass rate (%)	90	95
Innovation degree of job completion (%)		Undeveloped	10
Professional ethics, social responsibility		Undeveloped	Having clear understanding

## 5. Summary and outlook

Based on the support of intelligent information technology of large data, wireless broadband networks and other, through the immersion participate of schools, parents and other relevant stakeholders, with the wisdom of teaching means and methods, an intelligent learning environment was created for students. Good teaching effect was achieved. Compared with the traditional education mode, through the implementation of WEM, students had a general obvious improvement in the hands and practice, innovation, ethics and social responsibility, etc. This training model is more consistent with the development requirements of "training applications, complex, skilled personnel for social". In this study, parents actively participated in the school's teaching activities, which allowed parents to appreciate the teaching model, school management and education ideas. It provided a sustainable development direction for the school to found the private college with "the parents at ease, student satisfaction". In addition, parents who have been working in the first project line can constantly update the school's teaching content, so that classroom teachers do not only stick to the text box.

At the same time, WEM is a complicated systematic project, requires constant exploration and innovation, which may promote the sustainable development of WE, and provide a direction for the sustainable development of private college. This paper is only an explore on the WEM of "building codes" curriculum. Thereafter efforts may include the following: ① The WEM can be used in the architecture professional systems. It makes architecture profession feature of and wisdom as far as possible; ②The depth contacts and cooperation among schools, parents and teachers should be strengthened to build more intelligence, humane learning environment for students; ③Information level of teachers should be enhanced. Teachers' ability of engineering practice should be improved. The knowledge of teachers should be expanded. More teaching mode, update teaching content and more applicable teaching methods should be provided for students; ④Through the studying on the WEM of architecture course of private colleges, its findings can be applied in other professional courses in private colleges, which in play a secondary support role in building the wisdom course and wisdom campus.

## 6. Acknowledgement

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## The Current Situation of Chinese Service Trade and International Competitiveness Analysis

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**Keywords:** Service trade; Current status of development; International competitiveness

**Abstract.** As the reform and opening-up policy of China is conducted in a further and constant way, the foreign trade of China enjoys a rapid development. In 2009, export value of goods trade in China arrived at 1.20611 trillion USD which is 123.3 times as much as that of 1978. It was the first time that China that was over German became the largest export country in the world. However, the development of foreign trade in China still faces a huge challenge. For example, export scale of service trade is still small. In 2014, the total amount of Chinese service trade reached at 222.21 billion USD which only accounted for 9.3 of that of Chinese export less than 10%. Compared to the global service trade, the proportion is only 4.4. In addition, the international competitiveness of service trade export of China was in a low level. Therefore, compared to goods trade, the development of service trade should be further strengthened in both scale and quality. And for the development of service trade of China, there are still a lot of things to do.

## 中国服务贸易发展现状及国际竞争力分析

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**关键词:** 服务贸易; 发展现状; 国际竞争力

**中文摘要.** 自 1798 年以来, 随着中国改革开放程度的不断加深, 中国的对外贸易得到了迅速的发展。2009 年, 中国的货物贸易出口金额达到了 12,061.1 亿美元, 是 1978 年货物贸易出口金额 (97.8 亿美元) 的 123.3 倍, 也首度超越德国 (11,210.3 亿美元) 成为世界第一大出口国。但是, 我国的对外贸易发展依然面临着巨大的挑战, 譬如服务贸易出口规模依然较小, 2014 年, 中国服务贸易出口总额为 2222.1 亿美元, 仅占中国对外贸易出口的 9.30%, 不足一成。与全球服务贸易出口相比, 其所占比例也仅为 4.4%。除此之外, 中国的服务贸易出口的国际竞争力整体上处于较低的水平。因此, 较货物贸易而言, 中国服务贸易的发展无论是在规模上还是在质量上都有待进一步的加强, 其发展依然任重道远。本文采用定性与定量

相结合的分析方法，对中国服务贸易发展现状及国际竞争力进行分析，发现中国服务贸易发展中存在的问题，并针对上述问题提出提升我国服务贸易国际竞争力的对策建议。

## 1.中国服务贸易发展现状

### 1.1 中国服务贸易出口的规模相对较小

近年来，中国服务贸易出口规模整体上呈现稳步上升的态势，发展状态良好。2014年，中国服务贸易出口总量再创新高，达到了2222.10亿美元，较上年增长了5.51%。但是与中国的货物贸易出口相比，服务贸易的规模依然较小。近10年来，中国服务贸易的出口总额占货物出口总额的平均比率仅为11.08%，尤其在2014年，已下降到9.49%。这充分说明虽然中国已经成为了世界第一大贸易国，但是中国服务贸易的发展依然处于较低水平，贸易结构不合理，发展不平衡。

表1 中国服务贸易及货物贸易出口规模和比例

单位：亿美元

时间	中国服务贸易出口总额	中国货物贸易出口总额	服务贸易出口占货物贸易出口的比例 (百分比)
2004	620.56	5,312.74	11.68
2005	739.09	6,880.41	10.74
2006	914.21	8,775.59	10.42
2007	1,216.54	10,988.06	11.07
2008	1,464.46	12,842.44	11.40
2009	1,286.00	10,730.10	11.99
2010	1,702.49	14,075.05	12.09
2011	1,820.87	17,180.95	10.60
2012	1,904.40	18,582.74	10.25
2013	2,105.90	19,984.14	10.54
2014	2,222.10	23,427.48	9.49

数据来源：中国商务部网站

横向比较来看，中国的服务贸易出口所占世界服务贸易出口的比例依然较低。在金融危机的2008年，美国的服务贸易出口比例历史最低值还高达14.09%。而中国服务贸易出口占世界服务贸易出口的比例在2010年到达最高值，也仅为4.65%。这一最高值还不足美国历史最低值的三分之一，这充分说明中国服务贸易出口的发展依然任重道远。



## 1.2 中国服务贸易出口的结构趋于优化

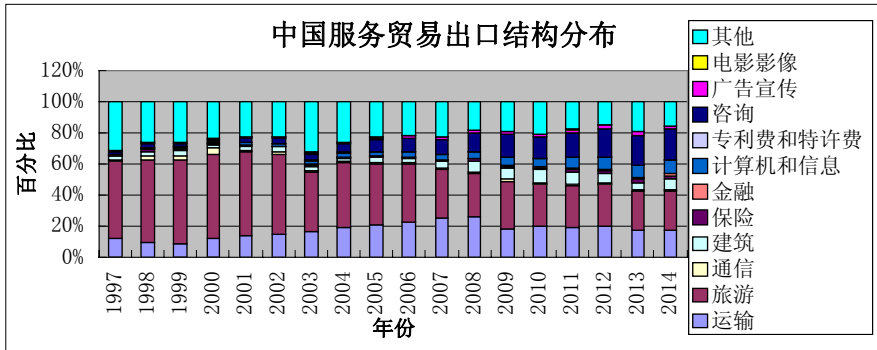


图1 中国服务贸易出口结构分布<sup>①</sup>

数据来源：《中国统计年鉴》

注：系列1-12分别代表服务贸易的12个类别，顺序如上文所述。

整体上来看，中国服务贸易出口结构分布趋于均衡（如图1）。2001年以前，仅仅运输服务和旅游服务这两部分的出口总额所占的比例就已经超过了中国服务贸易出口总额的60%以上，分布过于集中。而通信服务、建筑服务、计算机和信息服务以及咨询服务这四项出口总额的比例之和却不足10%。其余5项服务出口所占比例甚至不足1%。但是近些年中国服务贸易出口的结构得到了很大程度的改善。2012年，运输服务和旅游服务这两部分所占的比例为46.7%，相比2001年下降了21.46%，这说明中国服务贸易出口的结构正逐步趋于均衡。2012年，增长最为明显的咨询项目出口所占比例创下了历史新高的17.56%，相当于2001年的6.5倍。

## 2. 中国服务贸易国际竞争力分析

### 2.1 中国服务贸易整体竞争力分析

表2 中国服务贸易 TC 与 RCA 指数

时间	TC 指数	RCA 指数
2003	-0.0837	0.5531
2004	-0.0714	0.5585
2005	-0.059	0.5184
2006	-0.0465	0.5092
2007	-0.0303	0.5241
2008	-0.038	0.5395
2009	-0.1029	0.5076
2010	-0.0605	0.5548
2011	-0.131	0.5175
2012	-0.1906	0.4864
2013	-0.2195	0.4813
2014	-0.2646	0.3686

数据来源：根据中国商务部网站计算得出

2003年-2014年间，中国服务贸易显性比较优势指数RCA的取值均小于0.8，这说明我国服务贸易国际竞争力的比较优势较弱。2003年-2010年，RCA的取值围绕在其均值0.5332

<sup>①</sup>霍炳杰. 中美服务贸易逆差的原因与对策分析[J],2014

上下波动，波动幅度较小，这表明在此期间我国服务贸易竞争力比较优势基本维持原有水平。但是，自 2011 年以后，我国服务贸易显性比较优势指数呈现明显下降的趋势，这表明我国服务贸易竞争力比较优势趋于恶化。由此可知，虽然近几年我国的服务贸易出口规模不断扩大，但是服务贸易的国际竞争力却一直下降。

## 2.2 中国服务贸易各部门竞争力分析

表 3 历年中国服务贸易各部门 RCA 指数

时间	运输	旅游	其他
2003	0.4213	0.7089	0.5217
2004	0.4603	0.7877	0.4637
2005	0.457	0.7232	0.426
2006	0.5118	0.6986	0.4052
2007	0.5935	0.6174	0.4466
2008	0.6018	0.5975	0.484
2009	0.4455	0.6033	0.4857
2010	0.5254	0.5859	0.5516
2011	0.4895	0.5391	0.5191
2012	0.4859	0.5	0.4801
2013	0.4679	0.4822	0.4763
2014	0.4472	0.5059	0.4648

数据来源：根据《中国统计年鉴》和中国商务部网站数据计算得出

由表 3 可知，2003 年至 2014 年期间，中国服务贸易各部门 RCA 指数均小于 0.8，这说明中国服务贸易各部门竞争力均较弱。其中，旅游部门的竞争力整体上呈现较为明显的下降趋势，其竞争力指数平均每年下降 2.95%。其他部门竞争力指数下降趋势不明显。运输部门的竞争力指数波动较明显，2008 年以前，运输部门服务贸易指数上升趋势明显，并在 2008 年运输部门的竞争力指数达到了最大值 0.6018，但是随后呈现下降趋势，说明全球经济危机对我国运输部门的国际竞争力产生了较大的消极影响。综上所述，中国服务贸易各部门的国际竞争力整体上均呈现下降的趋势。

## 3. 中国服务贸易发展中存在的问题

### 3.1 逆差逐年增大，国际竞争力下降

如表 1 所示，中国服务贸易的出口规模逐年增加，但中国服务贸易的发展长期处于逆差，并具有逐年扩大的趋势。20 世纪 80 年代，受到改革开放政策的促进，中国的服务贸易发展进入了初始阶段。由于中国的服务贸易发展刚刚起步，国际竞争力较弱，中国的服务贸易进出口规模还比较小，基本处于平衡状态，仅有小额顺差。20 世纪 90 年代，中国服务贸易进入了蓬勃发展阶段。虽然中国服务贸易的出口规模逐年增加，但是由表 2 和表 3 可知，中国服务贸易的国际竞争力在此期间却逐年下降。1992 年，中国服务贸易首次出现逆差，逆差金额不足百亿美元，且呈现逐年上升趋势。进入 21 世纪，中国的服务贸易发展进入结构升级阶段。在此期间，中国服务贸易国际竞争力持续下降，服务贸易逆差不断扩大。2013 年，中国服务贸易逆差金额达到了 1184 亿美元，中国也首次成为世界服务贸易逆差最大的国家。2014

年，中国服务贸易逆差进一步扩大，达到了 1980 亿美元。

### 3.2 中国服务贸易地区发展不平衡

中国服务贸易的发展整体上呈现地区分布不均匀的特点。在国内市场，据 comtrade 数据库中数据显示，2014 年，中国服务贸易出口总额的九成以上来自于东部 11 个省份，其中近七成来自于北京、上海、广东等省市，而在内陆其他地区的分布尚不足一成。与内陆地区相比，东部沿海地区在金融、计算机和信息服务、保险等资本密集型行业具有明显的比较优势，而内陆地区仅在劳动密集型行业具有比较优势。从国际市场上来看，中国服务贸易进出口主要集中在香港、东盟、欧盟、美国以及日本等国家和地区。其中，中国香港是中国内地最大的出口目的地和进口来源地。双方服务贸易总额占中国内地服务贸易进出口总额的 1/4。中国香港、东盟、欧盟、美国以及日本等国家及地区与中国内地之间的服务贸易额占中国内地服务贸易总额的 2/3 以上。

### 3.3 我国服务贸易的法律及管理机制不够健全

在服务贸易的立法方面，与发达国家相比较，我国发展起步比较晚。虽然近年我国颁布了《商业银行法》、《保险法》、《海商法》等法规，但是尚未形成一套完整的体系，部分法律法规过于抽象、透明度不够、可操作性不强，这在某种程度上影响了外商对我国服务贸易发展的信心，阻碍了我国服务贸易的发展。

法律法规上的不健全势必会导致管理制度的不完善，出现管理不合理的现象。中国服务业主管的部门多而不精，出现管理权责不一，上下部门不协调等问题。而一些发达国家如美国和日本，均设立了专门的机构来统筹管理服务贸易的发展，这使得管理力量得到集中，部门管理职责得到明确，不易形成垄断，为其国内服务贸易的发展提供了良好的支撑。

## 4. 提升中国服务贸易国际竞争力的对策建议

### 4.1 加大金融业开放力度，支持中国企业“走出去”

中国的服务贸易逆差逐年扩大，国际竞争力下降的根本原因在于中国的金融业发展相对滞后，不能够为国内提供足够的金融支持，降低了国内服务贸易企业的竞争力，抑制了国内企业“走出去”，阻碍了国内服务企业的发展。

就金融业本身而言，加大金融业开放力度有利于提高其国际竞争力。加大金融业开放力度会产生技术溢出效应。结合金融业的特点，金融业所涉及的技术更多的是软技术，譬如，风险定价，信贷评估等专业知识，会计、税务、审计等应用技术。软技术的提升更多的依靠不是技术的研发与创新而是依靠员工技能的强化。加大金融业开放力度会使得国外跨国金融机构派遣高技能员工到中国或者培训中国本土员工，这样有利于中国金融机构提高其国际竞争力，促进金融业的对外输出，缓解贸易逆差。对其他服务行业而言，加大金融业的开放力度有利于降低其他行业的生产成本，同时还可以更好的为服务企业提供金融支持，促进国内企业“走出去”，进而改善中国服务贸易逆差现状。

### 4.2 抓住“一带一路”契机，打造服务贸易强国

首先，“一带一路”将成为我国服务贸易发展的重要平台。2014 年 1-11 月，我国服务外包合同金额和执行金额分别为 918.52 亿美元和 89.49 亿美元，同比增长 10.47% 和 29.21%。其中，承接“一带一路”沿线国家和地区服务外包合同金额和执行金额分别为 106.13 亿美元和 80.49 亿美元，同比增长分别为 22.28% 和 31.52%；<sup>②</sup>“一带一路”为服务贸易带来的发展契机将有利于改善服务贸易发展不均衡的局面，通过“一带一路”这一平台，更多地区可以

<sup>②</sup>国务院关于加快发展服务贸易的若干意见，2015

有效的配置资源来发展服务贸易，整体上促进了中国服务贸易均衡发展。

其次，在“一带一路”的贯彻实施进程中，进一步加强双边多边自由贸易的合作。各个省份应充分结合自身的地理、资源、技术等比较优势，积极参与到双边多边自由贸易中，促进服务贸易的结构升级，释放服务发展潜力、提升服务贸易竞争力，这可以从根本上扭转服务贸易长期处于逆差的局面。

### 4.3 完善服务贸易法律体系，成为全球服务贸易规则“引领者”

全球服务贸易正处于蓬勃发展阶段，许多服务贸易规则还不够完善，正处于逐渐的制定和修改过程中，这就为我国成为全球服务贸易规则的制定者提供良好的契机。成为全球服务贸易规则的制定者甚至是引领者首先要求我国国内的有关服务贸易的法律体系必须完善，只有这样我国才有资格参与国际标准和国际规则的制定。其次，建立高标准的自贸区网络。上海、广东、天津、福建自贸区的先后成功建立，为我国更广泛的自贸区的建立提供了宝贵的经验和良好的发展平台。以“一带一路”沿线国家和地区作为重点，立足周边，构建面向全球的高标准的自贸区网络，将为中国服务贸易的发展注入新的活力，为世界服务贸易发展中注入更多的中国元素，使得全球服务贸易规则制定中包含更多来自中国的声音。<sup>⑥</sup>例如，2014年10月24日，由我国倡导建立的亚洲基础设施投资银行（简称亚投行）正式成立，截止到2015年3月31日，包括英国、德国、意大利等西方国家在内的57个国家纷纷成为了亚投行的创始成员国，这已经成为中国开始参与并引领制定国际规则的一个重要标志。第三，简化服务贸易企业走出去的审批制度。加大力度缩小小微企业对外投资项目的审批范围；加快核准制向备案制转变；尽快落实“一站式服务”与“一站式审批”；为服务企业走出去提供后台保障与支持，形成服务企业走出去的公共服务平台。

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<sup>⑥</sup>政府工作报告[C], 2015

## Study on the Transfer of Rural Surplus Labor Force in Jilin Province

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**Keywords:** Surplus labor force; Transfer of labor force

**Abstract.** The development of urbanization and the process of rural surplus labors transfer can promote and complement with each other. The coordinated development of them is an inexorable law of economic and social development. How to guide the rural surplus labors to transfer towards cities in a reasonable way not only concerns the construction of new socialist countryside but also influences the economic development and long-term peace and order. This paper analyzes the existing problem which is in the process of rural surplus labors of Jilin province and puts forward with some countermeasures designed to promote the rural surplus labors transfer of Ji Lin province through the introduction of the current situation of Rural Surplus Labors of Ji Lin province.

## 吉林省农村剩余劳动力转移问题研究

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**关键词:** 农村剩余劳动力; 劳动力转移

**中文摘要.** 城镇化的发展与农村剩余劳动力的转移进程相互促进, 相辅相成, 二者的协调发展是经济和社会发展的必然规律, 如何合理的引导农村劳动力向城市转移, 不仅关系到社会主义新农村的建设, 还直接影响着经济的发展和整个社会的长治久安。本文通过对吉林省农村剩余劳动力转移现状的介绍及其转移过程中存在的问题进行剖析, 提出了推动吉林省农村剩余劳动力转移的相应对策建议。

吉林省是我国重要的农业大省, 根据国家统计局统计显示, 2015年, 在全国31个省份中, 吉林省粮食单位面积产量持续保持第一, 达到7182.1公斤/公顷, 远高于全国平均单位面积产量5482公斤/公顷。要想实现经济又快又好的发展, 吉林省必须重视农村剩余劳动力的转移。如何实现吉林省劳动力资源的最优配置, 对于吉林省国民经济的持续发展具有极其重要的作用。

## 1.吉林省农村劳动力转移现状

吉林省位于中国东北中部,北接黑龙江省,南接辽宁省,西邻内蒙古自治区,东南部以图们江、鸭绿江为界,与朝鲜隔江相望。吉林省作为全国粮食主产区,是一个农业大省,农村存在大量剩余劳动力,而且随着农业技术水平不断进步,农业生产对农村劳动力需求下降,致使吉林省农村剩余劳动力供给旺盛。吉林全省面积 18.74 万平方公里,下辖 1 个副省级市、7 个地级市和延边朝鲜族自治州、长白山管委会、60 个县,拥有 620 个乡镇、9321 个行政村、399.08 万农户。根据吉林省统计局 2012 年 2 月 29 日发布的《吉林省 2011 年国民经济和社会发展统计公报》,2011 年末,全省总人口为 2749.41 万人,比上年末增加 2.81 万人,全年出生人口 17.95 万人。随着全国及吉林省城镇化进程的不断加快,我省农村劳动力流动和转移的速度及规模也在不断加快。数据显示,2011 年,我省农村劳动力转移就业 372.3 万人,首次突破农村劳动力总数的 50%,2013 年,我省实现农村劳动力转移就业 390 万人,为历年之最。

### 1.1 劳动力转移方式主要以亲友帮带为主

如图 1 所示,吉林省 57% 的农村劳动力外出务工的方式是亲友帮带,仅有 7% 的人是自发外出务工,这说明吉林省农村劳动力对外地劳动力市场了解不足,劳动力转移处于被动状态。除此之外,吉林省政府单位组织农村劳动力转移外出务工的比例只有 7%,这说明政府和单位缺乏对农村劳动力转移这方面的重视,缺乏支持力度。选择其他方式务工的农村劳动力的比例为 29%。综上所述,吉林省农村劳动力的转移方式主要以亲友帮带为主,自发外出务工和政府单位支持次之。

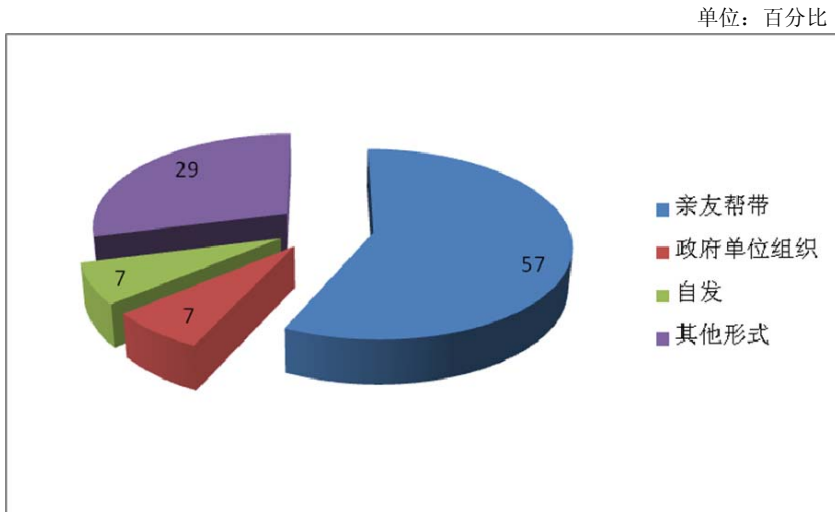


图 1 2015 年吉林省劳动力外出务工方式

资料来源: 中国统计年鉴

### 1.2 城市发展程度不够, 承载能力较低

吉林省城市规模主要以中小型城市为主,而中小型城市的基础设施发展不是很完善,对农村劳动力的需求不足。如表 1 所示,近些年来,受国际经济形势的影响,吉林省大城市新增就业岗位呈现递减的趋势,这对吉林省农村劳动力的转移产生了较大的影响,城市的承载能力不足,这就要求农村外出务工人员扩大转移半径,由本省向省外甚至国外转移。

表 1 吉林省部分大城市吸引农村劳动力人数能力

城市名称	2005 年			2010 年		
	新增就业岗位/万人	吸纳农村剩余劳动力数量/万人	占农村剩余劳动力总数比例%	新增就业岗位/万人	吸纳农村剩余劳动力数量/万人	占农村剩余劳动力总数比例%
长春市	58.70	23.78	21	43.78	17.51	22
吉林市	36.34	14.53	13	23.88	9.55	12
四平市	25.15	10.06	9	17.91	7.16	9
辽源市	22.36	8.94	8	15.92	6.37	8
通化市	26.55	10.62	9.5	17.91	7.16	9
白山市	20.96	8.39	7.5	14.93	5.97	7.5

数据来源：吉林省统计年鉴

### 1.3 吉林省农村劳动力外出从事行业较为集中

如图 2 所示，农村劳动力转移主要从事的行业以建筑业、制造业以及服务业为主，而工作的具体企业大多数为中小企业。这些领域中的中小企业抵抗风险能力不足，对法律法规的意识不够，违规操作的现象比较严重。甚至有些中小企业对外出务工的农民工采用拖欠工资，不签劳动合同，不缴纳社会保险等违法措施。从根本上讲，产生上述现象的根本原因在于国家相关的法律法规不够完善，缺乏对外出农民工合法权利的保护。

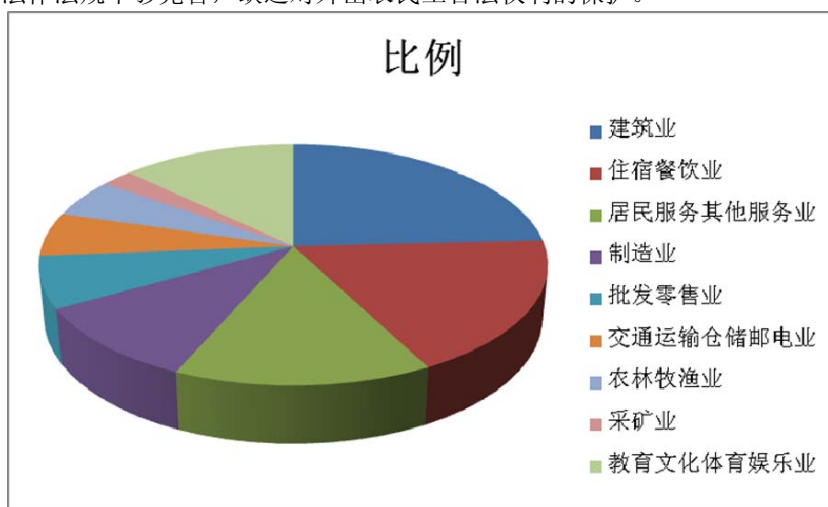


图 2 2015 年吉林省农村劳动力外出从事行业比例

资料来源：国家统计年鉴

## 2. 吉林省农村劳动力转移存在的主要问题

### 2.1 转移就业任务繁重，压力大

我省作为传统的农业大省，农村劳动力资源丰富，在现有的 700 万农村劳动力中，有近 180 万富余劳动力需要转移就业，总量性矛盾仍然十分突出，我省农村劳动力转移就业任务仍然十分繁重。随着企业转型、技术进步和产品升级，对从业人员技能要求进一步增强，企业用工需求与农民工自身素质较低的客观现实形成较大差距。同时，农村新成长劳动力转移就业过程中对工作岗位、工作环境、薪金待遇、自身发展以及企业发展环境等要求在逐步提

高,出现了部分农村劳动者要求体面工作、有尊严工作的心理诉求。而相当数量企业给予农民工报酬水平较低,由此形成较大的反差,导致出现一方面企业招工难,另一方面农村劳动力转移就业难并存的现状。

## 2.2 政府迁移政策的保障水平不足

当前我国社会保障制度被明确的分割为两部分,即城镇和农村这两部分不同的制度。农村社会保障主要是以家庭和集体保障为主,有着双重身份的农民工的社会保障尚未纳入城镇社会保障的范围。农民工在工作期间,虽然有着辛苦的付出,为城市的建设和发展做出了巨大的贡献,但是在社会待遇和保障方面却与城市市民有着巨大的差异。农民工的子女上学难,高考难,就医难,权益保障难等等一系列的问题其实也正是造就“民工荒”的一个根本原因。

## 2.3 县域经济欠发达,吸纳就业能力较低

吉林省县域经济基础薄弱,发展相对滞后,民营经济和个体私营经济不发达,就地吸纳农村劳动力能力有限,就地就近转移就业途径不宽。随着吉林省产业结构深入调整,城镇化进程加快推进,技能人才缺乏、就业信息不对称和劳动者择业观念转变等多种因素,加上工资偏低、工作环境偏差、人文环境不尽如人意等,都限制了县域经济的快速发展。

## 2.4 农民的自身素质不高

一是平均受教育程度较低。据第五次人口普查数据显示,15岁到59岁农村劳动年龄人口中,文盲和半文盲占5.2%,初中文化以下的比重高达79%。从教育范围来看,吉林省农村劳动力文化素质偏低,且城乡教育资源差距明显,基本上高等教育人口都在城市。二是就业观念传统。从农村劳动者自身的素质来看,大部分农民都存在封建文化思想,小农意识根深蒂固并且现代观念和意识淡薄。由于农村受地理条件的限制,对现代信息和新鲜事物接触较少,对市场经济、现代科技和高新产业不了解,怕风险、怕挑战和盲目经营的特性对农村经济发展造成很大的阻碍。

# 3. 促进吉林省农村劳动力转移的政策建议

## 3.1 调整经济发展方式,增加劳动力需求

一是发展劳动密集型产业。吉林省人力资源丰富,特别是农村剩余劳动力数量庞大。在面临资本劣势的情况下,按照市场原则,发展劳动密集型产业,符合吉林省经济发展的现实情况,有利于增加劳动力需求,促进农村劳动力转移。

二是大力发展服务业、旅游业等第三产业。农村服务业的发展带动更多农业劳动力向服务业转移,这是农村劳动力本地转移的重要方式。随着经济发展水平的不断提高,第三产业成为吉林省经济发展的最大构成部分,第三产业的增长能够有效的增加劳动力需求,促进农村劳动力转移。

三是发展现代农业。随着农业生产力的发展,农业就业劳动力越来越少,农村剩余劳动力越来越多,促进农村劳动力转移。发展现代农业,一是提高农业先进科技的应用,农业生产率的提高离不开农业技术进步,应持续增加农业机械投入;二是培养新型化农民,加强农民对生产技术的掌握,不断学习先进农业生产知识。

## 3.2 转变政府职能,加强制度建设

一是完善土地流转制度。土地流转制度坚持合理与有效原则,农民在获得长期土地经营权的同时却没有依法取得土地的自由流转权,大部分农民在外出发展的同时只能以兼业的形式管理土地,于是造成了人力资源和土地资源的双重浪费,必然也会制约农村剩余劳动力的转移。因此,土地制度的改革也应该与时俱进,在坚持家庭联产承包责任制的基础上,形成合理、



有效的土地流转制度。

二是建立城乡保障制度。从进城农民工的就业、维权、再教育及子女教育、医疗、住房和养老方面着手,以农民工最迫切的需求为主要保障功能完善的对象,稳中求快的依次解决,增强其社会生活的基本保障,减少农民工的盲目流动,促进农村劳动力稳定和彻底转移。

三是改革劳动力用工制度。在城乡就业矛盾突出的大环境下,一些地区政府所采取的城市就业保护政策限制了外来农村劳动力的进入,这样一来就阻碍了以市场为导向的和谐就业体制的推进,加剧了城乡就业市场的二元分割。为了建立城乡统一的劳动力市场,必须从可持续发展的角度出发,取消城市就业歧视和不公平的用工制度,以保证农村剩余劳动力有效地、持续地转移出去。

### 3.3 加快吉林省的城市化步伐

如图 3 所示,相对于其他发达省份而言,吉林省的城市化步伐一直较为缓慢。2008 年,吉林省的城市化比例只有 53.21%,远低于其他发达省份。截止到 2013 年,吉林省城市化比例达到了 54.20%,较 2008 年上涨了 0.99%。

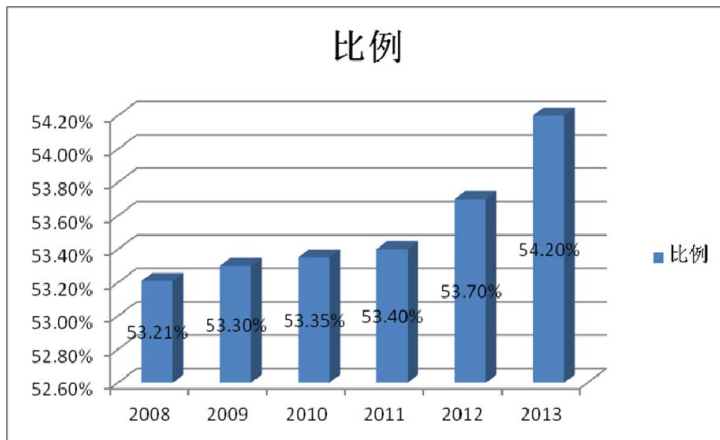


图 3 吉林省城市化比例(2008-2013 年)

城市化的好处是不言而喻的。近年来城市化战略的实施,为吉林省经济的进一步快速发展提供了良好的支持。城市化进程对居民收入的增长,消费的拉动,服务业的繁荣,对增加就业、提高居民收入的贡献都是巨大的。

### 3.4 努力提高农村劳动力自身素质

提高农村劳动力自身素质有利于促进吉林省农村劳动力转移。据统计,如图 4,90%的农村转移劳动力从事的工作主要靠的是自身体力,缺乏技术,而受到职业技术培训转移劳动力比例不足 5%。因此,加大农村劳动力培训力度,提高农村劳动力自身素质,有利于为农村务工人员提供更好的工作环境,进而促进劳动力转移。具体措施如下:

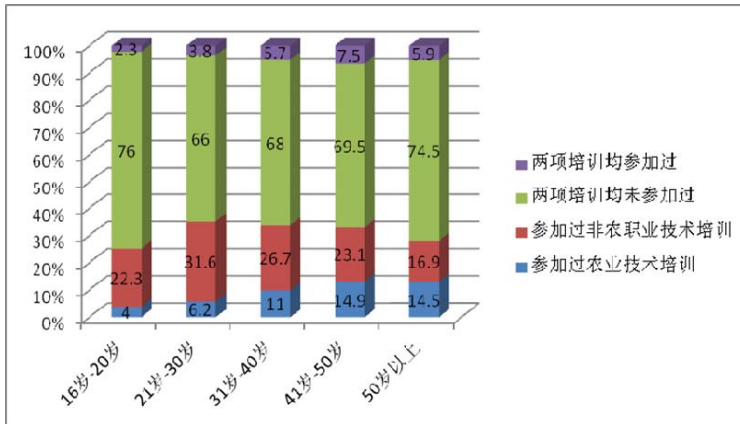


图4 吉林省农村劳动力接受职业技术培训统计

资料来源：国家统计局年鉴

一是加强教育意识，提高受教育水平。当前，随着“读书无用论”在农村的流行，大多数学生只接受了高中或以下的初级教育。由于大学扩招使得劳动力市场的教育水平整体提高，教育在劳动力市场发挥越来越重要的信号功能，农村劳动力在城镇劳动力市场的竞争力下降，不利于农村劳动力转移。所以，通过普及农村劳动力的受教育意识，加强接受教育的意愿，提高受教育水平，有利于吉林省农村劳动力转移。

二是要解放思想，打破保守意识。受到传统保守思想的影响，很多农村劳动力宁愿接受参与农业生产的低收入，也不愿意脱离土地，通过在城镇部门其他行业的就业来提高自己的收入水平。所以在完善社会保障的同时，解放思想，打破保守意识能够激励农村劳动力的转移。

三是新时代农民工要树立正确的就业观念。树立正确的就业观念，加强新时代农民工务实工作的态度，是促进未来农村劳动力有效转移的途径。通过家庭教育和义务教育来强化务实和责任意识，促进新时代农民工树立正确的就业观念。

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## Literature Review on Media Communication Strategy during Emergency Management

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**Keywords:** Emergency management; Media communication; Media function; Report principle; Agenda setting; Propagation characteristics

**Abstract.** In recent years, with the development and change of various media, the role of the media in the emergency management has been paid more and more attention by all sectors of the community. This paper summarizes the development status of media communication strategy in emergency management from the aspects of the media function, reporting principles, agenda setting and dissemination characteristics of emergency management. By Summarizing the deficiency of the current research, and then we put forward the forecast and suggestion to the future development of media communication in emergency management.

## 应急管理中介传播策略研究综述

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**关键词:** 应急管理; 媒介传播; 媒介功能; 报道原则; 议程设置; 传播特征

**中文摘要.** 近年来, 随着各种媒介传播方式的发展和变化, 其在应急管理中的作用日益受到各界的重视。本文从应急管理过程中的媒介功能、报道原则、议程设置和传播特征等方面对

应急管理中媒介传播策略的发展状况进行综述。从中总结当前研究的不足，进而对应急管理中媒介传播的未来发展方法和重点研究领域提出预测和建议。

## 1. 引言

当代社会，传媒对于政治与社会生活的重要影响不言而喻。尤其是在灾害条件下，传媒能够帮助在灾害酝酿阶段预警危机、在应对阶段更新灾害信息、在事后恢复阶段鼓舞人心并总结灾害应对的经验。传媒能让公众更加深刻与形象的了解灾害及其带来的冲击，而作为传媒议程设定者的新闻从业人员拥有选择报道倾向和内容的空间，由此会给应急管理带来积极或是消极的影响。传媒对报道内容的选择需要依据一定的原则与规律，更要受到它们所承担的社会责任的制约，在报道灾害时尤其如此。

在媒介技术高度发达的今天，危机事件中多种传播媒介综合运转，联合作战的趋势越来越清晰；且各显所长，优势互补。传统媒体在公信力上优势明显，其中的广播媒介凸显其特定危机情境下的独特作用；新兴媒体反应迅速、优势突出，且往往为传统媒体“补缺”，此外，新兴媒体在社会动员和组织、社会监督上的力量也初步显现。

近年来国内外各类组织以及研究人员越来越关注应急管理中媒介传播的作用和运作机理，并且取得了一系列进展。本文从应急管理过程中的媒介功能、报道原则、议程设置和传播特征等方面对应急管理中媒介传播策略的发展状况进行综述。从中总结当前研究的不足，进而对应急管理中媒介传播的未来发展方法和重点研究领域提出预测和建议。

## 2. 全流程应急管理过程中，媒介功能与报道原则等相关研究

公共危机传播是指在突发事件发生前后及其发生的过程中，通过大众媒介和其他传播渠道，在政府、组织与社会、公众之间进行的信息交流与沟通活动<sup>[1]</sup>。信息传播是应急管理的核心任务，在事前、事发、事中和事后等不同阶段，有效地信息沟通对于减少突发事件造成的损失非常重要。而在危机信息的传播中，媒介发挥着至关重要的桥梁作用，它一方面将有关政府和社会各界处置和应对的信息传递给公众，另一方面又将公众的情绪和意见反馈给政府。在应急管理中，媒介通常主要发挥着监督、舆论引导、社会动员及情绪支持等功能。

针对媒介在应急管理不同阶段扮演的不同角色、发挥的不同功能，Steven Fink提出了危机阶段分析理论，并具体阐述了各个阶段中媒介的功能<sup>[2]</sup>（见表1）。

表1 应急管理各阶段媒介功能分析<sup>[3]</sup>

阶段	媒介功能	具体作用表现形式
潜伏期	环境守望	充当守望社会环境的“雷达”，触角分布广泛，敏锐探测并发布预警信息
	议程设置	通过舆论监督，督促政府采取有效措施
		强化危机报道，培养公众危机意识 充当社会情绪“解压阀”，发挥舆论释缓功能
爆发期	信息沟通	发挥“意见交流桥梁”作用，在政府和公众之间确保信息及时沟通
	协调引导	正确引导舆论导向，消除不良社会舆论
	社会动员	鼓励：通过报道感人事迹激励受众
		聚合：利用积极报道凝聚人心 缓释：消解紧张和恐惧心理
营造政府正面形象	通过政府及时有效应对政策和决策人、领导人参与危机事件的报道，树立政府良好形象	
蔓延期	警示	控制阶段警示公众提高警惕
解决期	修复政府形象	危机过后对于政府调查危机发生原因并承担责任的报道，可以在一定程度上修复政府受损形象。
	反思	对事件中暴露出来的各种危机及在危机处理过程中经验教训进行总结和反思

同时，媒介领域的资深人士也对应急管理各阶段中的传媒报道原则与手段进行了系统总结（见表2）。

表2 全流程应急管理的各阶段中传媒进行有效报道的原则与手段

全流程应急管理阶段划分 <sup>[4,5]</sup>	应急管理中传媒有效报道的原则与手段 <sup>[6]</sup>
预防与应急准备阶段	<ul style="list-style-type: none"> <li>● 做好所有与灾害报道相关的准备，长期备战，非一蹴而就</li> <li>● 与相关政府机构建立长期联系</li> <li>● 充实“资源鸿沟”，丰富信息源</li> <li>● 了解不同媒体的报道特点</li> <li>● 培训官方、捐助方及相关部门了解媒介的工作方式</li> </ul>
监测与预警阶段	<ul style="list-style-type: none"> <li>● 培养洞察灾害的“敏锐嗅觉”</li> <li>● 简化信息的翻译与转化程序</li> </ul>
应急处置与救援阶段	<ul style="list-style-type: none"> <li>● 此阶段一般持续2周左右</li> <li>● 无法严格制定出“做”和“不做”的清单</li> <li>● 尽快为受灾者与救灾者建立互动通道</li> <li>● 弥补现有信息与所需信息之间的“鸿沟”</li> <li>● 建立中心台用以更好地了解灾害情况</li> <li>● 针对受灾对象有效、准确传递信息</li> <li>● 鼓励并支持各种形式的报道方式</li> <li>● 保持“敏感性”</li> <li>● 不要带有攻击性</li> <li>● 针对灾害中暴露出的问题，进行“对抗性”定位，减少柔和度，使报道更具责任性</li> </ul>
事后恢复与重建阶段	<ul style="list-style-type: none"> <li>● 加强对灾后的相关报道</li> <li>● 具有加速恢复力的作用</li> <li>● 除了生理需求，还需要关注心理需求</li> <li>● 关注会恶化问题的要素，如民族问题、区域割据等</li> <li>● 考虑与性别相关的问题</li> <li>● 缓解衍生性“文化”事件</li> <li>● 需要同时关注短期和长期的恢复问题</li> <li>● 了解现有援助手段与实际需求之间的矛盾</li> <li>● 新媒体能帮助解决社会阶层结构带来的问题</li> </ul>

### 3. 应急管理中的媒介依赖理论研究

媒介依赖理论与使用与满足理论是一脉相承的，由传播学者M. L. Defleur和S. B. Rokeach等人提出，该理论的基本思路是把媒介作为公众——媒介——社会系统中的一个有机组成部分，其核心思想是：受众依赖媒介提供的信息去满足他们的需求并实现他们的目标。他们的后续研究提出社会环境、媒介系统、人际关系的综合作用决定了个体潜在的媒介依赖程度<sup>[7]</sup>。媒介依赖的主要目标是要解释“人们何时和为什么接收媒介信息，以及这种接收对他们的信念和行为有什么效果，关键是说明人们是如何利用媒介资源以达到个人目标的。<sup>[8]</sup>”

后期的媒介依赖理论研究重点主要集中在媒介依赖的影响因素上，W. E. Loges在研究中提出，受众媒介依赖的强度与感知的威胁呈正比，也就是说让受众感觉到自己的生存环境受到威胁、面临危机时，其对于媒介的使用率会提高，依赖程度也会更强<sup>[9]</sup>。而W. Lowrey考虑9·11事件后的媒介依赖状况，发现感知到威胁的程度与年龄是媒介依赖的关键预测指标，而社会经济地位等与依赖程度关系很小<sup>[10]</sup>。

媒介依赖理论将社会、媒介和公众作为相互作用的有机组成，公众随时根据社会情境的变化调整对于媒介的依赖情况，当社会内部发生重大的冲突或者危机时，面对不确定性和恐惧、焦虑感，公众很容易产生强烈的信息需求，并采取积极措施使用媒介获取信息以满足相关的需求，此时公众对于媒介的依赖程度和使用率就会明显增加。

对于大规模突发灾害中人们的信息需求，Thelwall和Stuart认为三类信息需求可以基本反映大规模突发性灾害事件后受众对于信息的普遍心理需求，分别是：总体信息需求、个人信息需求和运用信息需求<sup>[11]</sup>，Lei等人将这三类信息需求进行细化<sup>[12]</sup>（见表3）：

表3 大规模突发性灾害时间总受众的信息需求及媒介传播倾向

需求类型	动机	可用于满足该需求的媒介
总体信息需求	想要了解灾害或危机事件的全貌，并获知政府应对政策及措施	报纸、电视新闻、收音机、网络等
个人信息需求	想要确保某些特定人群的安全（如朋友、同事、亲戚）	电话、E-mail人际沟通等
运用信息需求	想要就事件本身进行交流，而不仅仅止于被告知信息	人际交谈、电话、公告海报等

#### 4. 危机沟通中议程设置与媒体框架相关研究

在进行危机沟通时，人们需要通过媒体寻找有关危机进展情况及对策的信息，从而指导自身行动。卡特里娜飓风事件之后，危机沟通中媒体的议程设置与媒体框架等问题引起了学者的广泛关注。其中，议程设置是指以影响公众观点和公共政策为目标，刻意选择媒体报道所涉及的主题和事件的行为<sup>[13]</sup>。媒体框架是用来定义和解决问题，形成公众观点的有利机制<sup>[14]</sup>。在危机沟通中，框架分析手段可以帮助危机管理者制定合理的危机响应策略，通过提供有效信息使得组织维护形象。

简而言之，议程设置关注的是报道的内容，而媒体框架则关注报道的方式；对于两者之间的关系，学界存在两种基本观点：一种认为框架理论是议程设置理论的延伸；另一种认为框架理论与议程设置理论是两种理论体系，否认两者合流的观点<sup>[15]</sup>。

目前，这两种理论已经被广泛应用到了危机沟通的研究中，譬如，在研究卡特里娜事件时，Dill和Wu分析了灾害过程中地方政府、州政府和联邦政府所关注主题的差异，地方和州政府层面关注生活、财产和信息需求，而联邦政府的关注点则更为宏观和广泛<sup>[16]</sup>；An和Gower分析了247篇新闻，根据危机类型检验媒体使用的五种不同新闻框架（责任分配、人类利益、冲突、道德和经济）和责任层次（个人和组织层面）<sup>[17]</sup>；Gallagher等通过分析美国联邦应急管理部门、国土安全部、国会以及密西西比、路易斯安那和德克萨斯三州州政府的新闻发布内容，检验了美国政府在卡特里娜和丽塔飓风到来之前、之中和之后的危机风险沟通策略框架<sup>[18]</sup>。

国内针对媒体报道的内容分析研究，多数从内容广度的角度研究媒体与政府关系问题，如董小英等系统分析了国外媒体对多个奥运举办城市相关报道的议程设定等问题，探讨了有关奥运会的媒体报道与国家形象建设之间的关系<sup>[19,20]</sup>。薛可等对上海5家主流报纸的地震报道，从主题词角度进行了追踪分析，从中探索我国报纸媒体在灾难报道上的阶段性特点<sup>[21]</sup>。但关注内容深度，聚焦媒体问责，并结合应急管理进行分析的研究尚没有发现。

可见，对媒体报道的主题及其内容进行分析，不仅可以规范媒体本身的行为，同时也能作为危机环境下的政策导向提供资料 and 基础。

#### 5. 应急管理中各类媒介的信息传播现状与特征研究

针对应急管理的特殊时期，对各类媒体的研究表明：第一，电视是中国公信力最高的媒体<sup>[22]</sup>。第二，广播在应急管理中的特殊作用应予以重视。20世纪90年代以来，每次重大突发灾害发生时，日本总务省特批开设临时救灾调频广播电台，主要有两种：一种是把灾区原有的社区广播发射功率提升到50W来进行救灾报道，灾害发生后广播电台立刻转入救灾特别节目。另一种形式是在市政府内开设临时救灾调频广播电台<sup>[23]</sup>。第三，对于新兴媒体，要善于管理，将其纳入应急管理系统。新兴媒体的力量在信息化时代怎么估计也不过分。突发事件中的三类信息需求都借助新媒体的力量：关于突发事件的一般信息需求——Google Map；个

人信息需求——手机短信；关于应急管理的信息需求——社会性媒体的应用（又称社会性软件 social software，作为Web 2.0的核心，它是博客，维客、图片获视频网站、社会交友网站等众多新兴网络传播方式的总称。）尤其是对于中国这样一个拥有世界上最多的互联网用户（2.21亿）和手机用户（5.74亿）的国家来说，对新媒介的关注更显重要<sup>[24,25]</sup>。

## 6. 结论

综合以上研究现状，关于应急管理中媒介传播策略的研究在取得一系列重大进展的同时，还存在一些不足。如：缺乏对传统媒体（电视、广播、报纸、杂志等）和新兴媒体（网络新闻、微博、微信、网络论坛等）在突发事件中的运行规律与特点的完整、系统的研究与总结；缺乏对突发事件中各类媒体的信息传播及其应对技巧进行全方位的梳理等。

因此，在凸显政治与社会生活多元矛盾的突发事件的应急处置过程中，结合应急管理的具体工作内容作为媒体报道的主题，传媒报道在遵循相关伦理、方针和报道策略的同时，关于应急管理中媒介传播策略的研究将会向以下几个方向发展：

第一，基于平衡公众的知晓权与受灾对象的隐私和尊严之间的关系的媒介传播策略。

第二，在信息技术基础上，从媒介传播角度研究如何注重对相关政策、制度和人力资源的建设，促使更加有效地传递灾害信息。

## 7. 其他

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## A Brief Study on Effects of Sports Club Teaching Mode in Chinese Universities

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**Keywords:** Chinese universities; Physical education; Sports club teaching mode; Impact

**Abstract.** Due to the massive reformation conducted by the ministry of education, exploring updated teaching modes has become a priority in physical education. Under the impact of Western teaching concepts, the sports club teaching mode for physical education has been introduced into Chinese academies. The new teaching mode excels in cultivating individuality of undergraduate students and advancing their sports efficiency and ability.

## 高等院校体育俱乐部式教学的作用

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**关键词:** 高等院校；体育；俱乐部式；教学；作用

**中文摘要.** 由于教育部对体育教学实施大规模改革，教学模式与体系是现今改革的主题。在受西方教学理念与思想影响之下，也逐渐引入了俱乐部形式的教学。基于该模式在教学上存在较为明显、特色的优势，可在我国高校教学中作为新型模式，进而彰显体育教学特色性。它在教学上对学生在体育方面发展提升了个性化重视度，建立以学生个体发展为本教学思想，以促进教学对素质提升的发展。

### 1. 引言

高校体育教学开展的俱乐部模式，是现今社会发展与转型的需求，将运用俱乐部方式教学去影响体育教学。该教学旨意在于转变学生参加体活的积极态度，通过体育活动展现个性化发展的优势，因此学生的态度是落实教学的重要基础，而俱乐部活动是推展体育素质教学的主要途径。为此，开展新鲜的俱乐部形式教学，已经成为当前体育教学的主体部分。在研究其对教学具有的作用性过程中，是促进教学改革的重要产物。它不仅增强了学生体质于体能，还促进了教学对学生实施的个性化发展，有利于形成终身锻炼与发展体育的思想观。

### 2. 高校对体育教学俱乐部模式的定义

在现今社会认知中，其兴趣是社会各项活动得以实现于发展的基础要素。而高校将体育教学中俱乐部模式定义为：具有相同体育爱好的学生通过组织形式聚集在体育活动的团体中。

该教学是实现俱乐部各项体育活动的基础，它将学生个体的体育技能作为培养目标，进而实现教学对体育规划的目的。俱乐部模式在教学中实施是建立在兴趣基础之上，利用主观产生积极性追求个性化体育发展。它细化了体育教学的各项工作，进而根据个体差异性实施教学计划，有利于形成固有的训练模式，进而转变传统教学思想，从根本上转变学生在教学中的地位。在该模式的指导下，学生迅速转变了对体育的态度，协助教学实现多样化的发展。

### 3. 探讨在高校开展俱乐部模式体育教学的作用

#### 3.1 增强学生终身锻炼的体育意识

随着社会增强了体育意识，高校也提升了对学生健康状况的重视度，促进健康与体育共同发展是现今高校实现体育教学的目标。在教学中开展俱乐部模式，有利于鼓励学生积极参加体育运动，为自身锻炼提供运动条件。例如：开展竞技大赛与创意活动，都使俱乐部教学丰富了内容，进而使学生在体育活动中寻找到竞技的成就感。因此，该教学不仅能适应体育发展的需求，还能使学生在参与教学过程中增强自我终身锻炼的体育意识。高校俱乐部教学通过自身发展，为学生提供良好的体育锻炼环境，满足学生对体育锻炼的个性化需求，同时展现教师专项技能的优越性，在共同发展中增强他们终身锻炼的精神与意识。

#### 3.2 培养与发展学生对体育运动的兴趣

终身教育培养的工作是按照学习阶段进行划分的，将贯穿个体的三个发展阶段，包括：学前、学校以及社会三个终身阶段。在高校体育教学中，实际是学校和社会阶段的衔接与交替时期。在高校中体育课程大多数具有两年的年限。根据学生实际情况调查，它们比较喜欢体育项目，但由于受到学习年限的限制，不利于培养与发展它们的体育兴趣。然而，在高校体育改革中实施俱乐部学习模式，将在课程机制上打破常规的限制，进而延伸了它们的体育教学。因此，其模式在教学中发挥着重要的作用，使学生的体育兴趣得到充足性的发展，在培养与发展中更好的做好与社会阶段体育的衔接，有利于在教学中使学生发展与锻炼身体有兴趣。

#### 3.3 提升自我锻炼的综合能力

对于体育教学而言，学生自我锻炼的综合能力是对其知识与项目技能的发挥，更是运动能力的展现。对该能力的发展实际上发展学生个体，同时增强自身体质，令学生全部掌握体育锻炼的科学方法，进而促进体育教学向终身化方向发展，以此提升我国高校体育健康的整体水平。与此同时，在提升自我锻炼综合能力过程中，充分利用自评表突显自我锻炼的困难程度。根据自评表比较，有利于合理制定体育教学的安排，提升自我完成体育锻炼的独立性。经过俱乐部模式在教学中灵活性的运用，为大多数学生提供可提升自我锻炼综合能力的保障，因此具有可实践的教学意义。

#### 3.4 强化学生整体运动水平

体育教学目的在于不断促进对学生体育竞技的发展，利用俱乐部模式在教学中大量培养高竞技的体育人才，并为其注入新生的发展力量。俱乐部模式在教学中应是具有针对性与计划性的，结合开设的专项技能课，使自身专项优势得到全面展示。通过对专项技能课程的学习，加之兴趣的培养，从整体上强化高校学生运动的水平。由于其教学最大的优势在于达到学生对专项运动项目需求的目标，能为学生创造自我锻炼的机会，并通过专项比赛实现自身体育价值。因此，学生在主动加入之后，能够以极限的方式发挥自身特长，并使运动水平得到有力的强化。经过教学实践基础的证明，其教学模式的实施具有强化学生整体运动水平的作用。

综合以上教学作用的分析，在教学改革中实施俱乐部模式是同时代共同发展的体现。在培养学生体育兴趣同时，满足对体育教学的需求性。此模式的运用有利于高校完善教学改革

的政策，进而对传统教学进行创新，促进学生树立终身发展体育的意识，使健康锻炼的思想得到发展与延续。

#### 4. 研究提升其教学作用效果的对策

高校在尝试俱乐部新教学时，为了使教学发挥更好的作用效果，应采取相应的发展对策去应对。譬如：根据体育教学特点构建科学的选课系统，进而使学生在俱乐部模式下自由选择体育项目、以及自由参与，在选课结束后，学校针对选课群体统一安排教学的时间，并由体育专项教师授课。另外，为了避免学生产生盲目选课的现象，在选课前集中进行选课辅导，确保学生选择出适合自身发展的体育项目。同时构建体育评价机制，使教学呈现出一定的高效性，督促学生增强体育技能，也间接提升了对教师在教学方面的考核，促进教师认真从教，更好的发展体育教学。

#### 5. 总结

我国高校体育在教学方面正处于进步的阶段，为了使教学机制改革的更有意义，充分展现教学重点以及体育发展形势，利用俱乐部模式全面提升学生在体育方面素质，将个性化发展融合在教育机制中，着重发展学生体育兴趣，以此增强学生终身锻炼的健康意识。在提升自我锻炼综合能力时，进而强化高校整体运动水平，促进体育教学在俱乐部模式与环境下得到和谐性的发展、以及完善教学各项工作，使教学改革在落实过程中更有发展意义。

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## Physical Education for Students with Poor Fitness \*

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**Keywords:** Body constitution; Students with poor fitness; Physical education

**Abstract.** The reform in Chinese teaching system has brought about an enormous transformation in sports training. An ideal teaching plan should center on students' individual fitness and put more emphasis on those with poor fitness. Thus, all students' mental and physical state can be improved, and the aim of elevating teaching quality can be achieved. Under the updated teaching theories of physical education, following the "people-oriented" principle will undoubtedly help educators adapt to the new circumstance.

## 体质弱势群体的体育教学探析

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**关键词:** 体质; 弱势群体; 体育教学

**中文摘要.** 随之教育机制的更新, 其教学也发生了巨大转变。在现今学校中体育教学, 需要根据学生自身体质以及弱势群体量身定制具有严谨性教学规划。利用更新的教学机制从整体上提升学校体育教学综合质量, 进而完善在体制方面弱势群体其体育技能, 以实现整体性、全面性优化与落实具有特色性体育教学的方案。在已更新的体育教学理论下, 针对弱势群体以优化原则实现现今以人为本教学思想, 有利于适应教学发展的新形势。

### 1. 引言

当前我国所有学校已经在体育教学方面实施了改革, 将改革重点内容放在教学本身上, 其内容与方法是影响学生素质培养的主要致因。因此, 要想从整体上提升全国学生的是体育素质, 就要对放宽政策为弱势群体提供保障, 进而解决他们的心理问题, 有利于彰显体育教学实施改革的现实意义。在弱势群体的学生体质背景下实施教学改革, 将全面拓展健康第一的重要指导思想, 提升教学对公平、公正、和谐发展原则重视度。另外, 对于学生体质方面体现的弱势群体展开分歧性研究, 使此部分群体提升健康指标。

### 2. 分析体质弱势群体在现今体育教学中表现现状

该群体在形成以及发展的整个过程中, 就已经备受社会各界的关注。此群体逐渐走进教学中, 特别是在体育的教学落实方面, 体育教师可以根据该群体体质情况进行等级的分类,

从而规划处个性化教学方案，并结合差异性评价与考核标准，以从根本上整整促进整个学生群体健康的发展。经过教学的实践，针对弱势群体的体制差异性开展利于健康发展的保健课，进而帮助他们促进自身身心健康的发展。但在教学的实际实施过程中，其执行力度体现不够强大。某些教学方法与综合评价、考核的标准有待完善。传统教学法已经不适应现今该群体的体育发展需求，遏制了此群体在体育健康方面的发展。要想达到弱势群体对教学的需求，应结合科学方法制定具有适宜性教学方案、体系，进而使其得到体育项目及或活动的锻炼。此外，应该用现今灵活的评价、考核标准取替传统单一的评价体系。针对群体差异性，根据学生体质进行综合性衡量与评价，推动体育教学在改革中的发展。

### **3. 针对弱势群体实施教学改革的切实对策**

#### **3.1 根据层次划分与明确其群体规模性**

在全国范围性落实体育学科教学改革，在教学的初期就应先确定群体具有的规模性，进而为后期教学提供指导的重要保障。标准自测在项目设置上存在简单性，有利于学生自身实现测评的工作。基于标准测试的优越性，应在教学环境下提升宣传的力度。基于弱势群体存在体制差异建立独立的档案，以此形成清晰的层次，并将其划分成三个等级。因此，根据层次划分进而明确其群体实际的规模，便于配备有针对性、适宜的教师。

#### **3.2 确定并落实具有层次性教学目标**

基于国家教育政策以及学生对求学表现出的需求，其体育学科教学应该辅助学生达到教育对毕业测试合格的标准。根据学生体质的局限性进而对其教学目标适时完善，最后将教学目标定位为健康第一指导思想。面对病、残障等级的群体可以不在教育政策约束下，提升自身的健康水准；而测试不合格以及差异性体质等级的群体，应制定以提升自身体质为最终的教学目标，以便促进他们达到健康的体质。因此，教学合理目标应该是根据群体差异性划分层次进而加以科学性分化，使教学目标落实得有意义。

#### **3.3 优化体育教学的整体内容**

根据学生体质进行优化教学内容时，应该遵循适宜性、针对性原则完成内容的优化。因而，在实际教学中应选择具有针对性、多元化的体育内容。将以优化的教学内容应用到教学中，有利于协助学生顺利达成健康锻炼的目标。例如：在学校中开展的保健课，其中涉及的保健与康复等内容，都比较适宜病、残障等级群体落实理论、实践的体育学习。然而，测试不合格以及差异性体质等级的群体，则需要在教学内容基础上增加具有趣味性体育游戏，以便符合他们对运动项目的需求，进而展现教学的适宜性、针对性。

#### **3.4 运用综合性完善评价的方式**

由于弱势群体存在体制差异性，若是用正常学生的评价方式与标准去衡量他们体育成绩，不但不利于此群体学生提升成绩，反而会起到反作用，进而影响他们参加体育运动项目的锻炼，就无法达成最终的教学目标。因此，要求教师转变成绩的评价方式与标准，从多角度、多层次去评判他们的成绩，进而彰显评价具有综合性与适宜性，以体现教学更注重学习行为与态度。通过教师、学生综合性评价，确保评价结果具有合理性。

### **4. 研究体质弱势群体对体育教学落实的意义**

#### **4.1 提升体育教学整体水平**

在现今体育教学中，对其弱势群体实施具有针对性与适宜性的教学目标，通过规划层次性目标，有利于在教学中提升整体水平。由于传统教学的局限，统一的标准化教学内容严重

影响了其教学成效。不仅使学生产生较大的体育学习压力，还降低了体育兴趣。然而，现今推行的教学方式、内容、目标等，既减轻了学生内在的心理压力，还促进了身心与健康的发展。在针对体质差异进行制定教学方案时，具有适宜性目标，在提升学习兴趣基础上，间接提升其教学整体水平，以促进其教学在改革中的发展。

## 4.2 有利于形成多样化教学

学校以及教育部综合提出针对弱势群体实施教学改革，便于在教学中促进多样化、多元化发展，进而从教学的评价、考核体系标准上进行完善与优化。不仅使教学内容得到丰富与优化，进而适应个体差异的发展目标。在重视教学的基础原则下，运用目标与评价标准的转变，去符合教学发展目标。教学不仅制定与实施了适宜性的内容与目标，还从方式上进行全面性改革，注重对弱势群体体质的增强与精神建设。例如：弱势群体的体质不适合做剧烈、有力的运动，所以要运用保健科去逐渐提升他们的体育体能。利用运动项目的适宜性，进而不断增强学生健康体质、体育技能，实现教学规划的针对性目标。

## 5. 总结

在各学校中改革体育教学，尤其是面对弱势群体展开体质差异性教学，根据学生自身现状，分析其教学所表现的问题与现状，并提出有利于学生与教学共同发展的切实对策，使体育教学的研究与改革在实际应用中具有可行性意义。结合教育的相关规定与政策，全面改善、优化现今发展的教学，以达到提升教学成效、增强学生体活技能、促进健康发展的综合教学目标。通过制定具有适宜性的教学目标和规划，使学生体育整体素质得到全面与协调发展。

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## The Application of Systemic Functional Linguistics to Translation Study

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**Keywords:** Systemic Functional Linguistics; Translation; Environment; Cross-Cultural.

**Abstract.** Although translation deals with language, it can't be done independent of the cultural system that language belongs to. Translation is fundamentally concerned with code conversion between two cultures, of which cultural vocabulary constitutes an integral part. The author found that it is necessary to clarify and explain the concept of cultural background knowledge to help translators better identify their problems, and improve quality and correctness of their translations. In addition, the author explores the source of those ungrammatical sentences and analyzes what is the original Chinese grammar and what is the Europeanized grammar. Due to Systemic Functional Linguistics' emphasis on communicative effect, consistent with the purpose of translation, therefore, more and more translators guide their translation study with this theory. This paper conducts translation study from the perspective Systemic Functional Linguistics.

## 系统功能语言学在翻译研究中的应用

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**关键词:** 系统功能语言学; 翻译; 环境; 跨文化

**中文摘要.** 翻译虽然处理的是语言, 却不能脱离语言所属的文化系统。因此翻译所从事的, 其实是两个文化中的符码转换, 其中当然也包括了文化语汇。笔者发现有必要将文化背景知识的概念加以厘清和解释, 才能帮助翻译者认清问题的症结所在, 进而帮助他们解决问题, 以确保翻译的质量和正确性。除了文化背景知识问题外, 笔者讨论不中不西的文句的来源, 试着剖析何者为中国语法本来的面貌, 何者为欧化的语法。由于系统功能语言学同样关注交际效果, 与翻译的目的相一致, 因此, 越来越多的翻译工作者都在寻求这一理论在翻译方面的支持作用。本文将在系统功能语言学视角下对翻译进行研究。



## 1. 研究背景

Halliday 在 *Construing Experience through Meaning: A Language-based Approach to Cognition* 中解释他们的系统功能语言学中的“系统”是指语言行为为一套符号系统或由一组特点组成的网，并不专指所有合乎语法的句子的组合，而是把语言作为一个具有社会功能的体系。这一体系给人们提供了一套供选择的与社会环境相联系的“意义潜势”(meaning potential)。这一意义潜势是意义的有规则的源泉，人们依据这一源泉在不同的语境中选择切合某种社会功能的语言。所以，我们在分析判断一个句子或一段文字的意义时，绝不能只根据语词使用和句子构造是否合于规则而定，而是要根据语言的社会功能，要看某一具体的语言运用中是否符合潜势的规则，是否得体，而意义潜势与得体言语的选择与判断和语境因素密切相关，和社会文化规约密切相关。这一理论为我们探索语言中的文化因素提供了理论的与方法论的基础。随着时间的推移，系统功能语言学与翻译研究的关系越走越近。可以说，当代最有影响的翻译理论家几乎都是从系统功能语言学中汲取营养从而取得成就的。除了卡特福德和贝尔之外，纽马克、贝克、哈蒂姆、梅森、豪斯等都将系统功能语言学的观点用于翻译研究，成就卓著，至少占据了当前翻译界的半壁江山。

对于系统功能语言学路向的翻译研究现状：存在的不足和取得的成就，我们认为，要进行科学、理性地分析，既不能因此妄自菲薄，否定它对翻译研究的指导和启发意义；也不能沾沾自喜，而裹足不前。首先，对于系统功能语言学的翻译研究的不足，我们应当看到：由于社会本身的包罗万象，基于社会符号学取向的，因而基于实际使用的言语而构建的系统功能语言学理论，自然要比形式语言学，如转换生成语法只关注的抽象的语言，只描写如何生成合乎语法的句子的语法理论，当然在语法的范畴化、框架结构等方面复杂得多，这虽然因此导致了前述应用于翻译研究时的选择的不便和操作性不足，但实践业已证明它比关乎如何生成语法合格句子而演绎出的几条规则的转换生成语法对翻译研究更有指导性。

## 2. 系统功能语言学的理论概述

系统功能语言学是一门专长于描述探讨语言及语言使用情境即社会语境之间的关系的语言学理论。分析的结果则以描述统计学呈现出。由于语言具有生物生态性，有些语言在逐渐走向衰败甚至死亡，而有些语言则根深叶茂，长势迅猛。这是自然规律，也是历史规律。但是，如果语言的消亡是由于非自然因素、人为因素，那么语言的生态就遭到了人为的破坏<sup>[1]</sup>。全球化，即美国化，正是这样一种破坏因素。英语成了全世界的共同语，世界各国的资料文件，只要参与国际交往，就要将其译成英语，而且归化率非常之高，非强势语言的国家民族主体性很少得到彰显。语言生态平衡受到严重破坏。怎样才能遏制语言生态的失衡呢？翻译不失为上上之策，首先翻译要打破传统的形式对等，动态对等等旧框框，引入异化的翻译，对欧美中心主义进行解构。异化的翻译抑制民族中心主义对原文的篡改，在当今的世界形势下，尤其需要这种策略上的文化干预，以反对英语国家文化上的霸权主义，反对文化交流中的不平等现象。异化的翻译在英语里可以成为抵御民族中心主义和种族主义、反对文化上的自我欣赏和反对帝国主义的一种形式，以维护民主的地缘政治的关系。功能翻译理论主要在研究文本类型的功能、翻译目的和翻译方法之间的关联，不同类型之文本附载不同功能，若欲在译文中传达相同的功能定要能善用各种翻译方法。

当前教育所面临之挑战为社会生态的理解以及个人的养育，而社会生态以至于自然环境之生态危机的根源则为经济、技术以及个人的短视近利，此即为当前消费文化的主要特征。因此对于教育中助长生态危机之文化预设的理解，则必须针对消费文化进行反思，并以有助于生态永续的文化形态作为教育的核心。在更大程度的平等与个人自由之理念的背后，潜藏着人类对于物质欲望的需求，每个人都可以依据其收入满足欲望，而个人竞争力的增加则代表着欲望满足等级的提升<sup>[2]</sup>。然而在提升个人生活舒适度的背后，环境资源的消耗则被忽略，

消费文化的意识型态也随着经济的全球化而压迫其它的在地文化，造成文化型态的单一化。为文化信念转化为个人意识的过程中，其间的线索便是语言，而语言不只作为两者的连结，同时也是对于世界、个人的定义和理解，且在沟通的过程中，文化与个人均获得确立、延续或是改变<sup>[3]</sup>。

一般认为词汇的意义深受文化影响，语言功能特殊，因此使用母语翻译教授单词直接对应的结果不仅造成误解，而且容易出错。就算是实物、图片、动作演示、外语定义以及外语同义词等其他方式也都有其不足之处：实物无法涵盖一个单词的所有涵义，图片、动作演示也不是直接使用外语呈现单词，另外，要能够从外语定义或同义词来学习单词，必须是外语能力已经达到一定程度。正因为不同语言其字义、句构、语用功能无法直接对应，所以更需要借助翻译来判断，找出翻译困难并加以克服<sup>[6]</sup>。彼得·纽马克、蒙娜·贝克是自下而上语境分析模式的代表。纽马克认为，词语和语境的联系是先后搭配，然后到分句、句子，最后再和具体所指和概念相联系，即和语言外的世界和认知相联系。他把译者的翻译过程概括为这样一种顺序：从词语上升到词组、搭配、分句、句子等更大的语法单位，最后再上升到整个文本以及作者的个人语言风格。翻译过程是一种由词语到语篇的波浪上行的扩展过程，处理翻译困境的出路在于更大的话语单位，即翻译困境的处理需以更大的语境因素作为参照；而作者、读者心中的事实真相或者说关于事实的真实记载始终是译者翻译过程中的参考标准。“信源”是“为即将翻译的文本提供意义的文化”，“信宿”是“原文本得以重构的语境”。译者是信源、信宿的调节器、协调员，两种文化的理解不仅互为参照，而且应通过译者的理解，是译者“把不同系列的心理倾向和认知假设搬到了翻译桌上”。因此，在他看来，翻译语境是由译者搬到翻译桌上的两种语言文化的相关语境因素互动的总和。

针对当时翻译理论界对文化分析不够重视的状况，他提出：语言符号代表的意义源于作者写作时的文化世界；意义可能隐含在外显的语言结构中，体现着一个民族的主要关注和假设；我们必须研究翻译涉及的所有语言和文化。对翻译的源出文化及目标文化了解得越多，我们对作者原义的传达也就越能恰到好处。要想把一种文化经历有效地传递到一种全新的语境中去，就必须不偏不倚地理解和把握文化因素对作者的影响。模糊限制语表示的是不确定性、临时性和可能性的意义，是专门用途英语，尤其是英语学术论文写作中常用的策略。它给作者及读者留下讨论的余地，体现了作者的科学态度及对同行的尊重。使用模糊限制语可以防止表达的绝对化，同时保护作者在发表自己的创新见解时，免受批评和攻击。简而言之，模糊限制语在专门用途英语的人际意义主要表现为这么几个方面：体现了作者对待学术的严谨、客观的态度；反映了作者尊重同行、读者的礼貌态度；表现了作者愿意就自己所讨论的内容与读者进行商榷的对话倾向；同时还体现了作者自我保护的意识。

### 3. 系统功能语言学在翻译研究中的应用

#### 3.1 以不同的语言系统重现语言环境

专业翻译除了文字本身，译者还要对原著进行文本分析，分析的范围包含语言本身以及语言背后的种种考虑，例如：文章主题、原作者态度以及文本表现出来的立场或目的等，译者必须判断译文是否做到原文想要达到的效果。另外，文体、语言风格、目标读者属性，这些都是翻译时所要考虑的因素，唯有审慎思考过这些语言本身和语言以外的各种因素，选择适当的翻译策略，才有可能产生好的译文。

理想的翻译应该是由外语译入母语，好的译者拥有的不只是语言能力而已，专业知识、转换技巧、写作能力以及能否兼顾修辞、信息、风格等，这些都决定译文的价值<sup>[4]</sup>。

翻译必须在两个语言之间转换，因此翻译作为教学活动或测验工具经常会认为是对母语的干扰。不同语言背景的第二语言学习者所犯的错误有许多相似之处，另外第二外语学习者在第二语言时不必然会借用母语语法，因此母语不一定会造成干扰错误<sup>[5]</sup>。

原作的艺术性客观存在，译者的艺术再创造是有依附性的，片面强调主观艺术性并不科学。我们不能不顾原文的形式约束，创造出源语中并不存在的形式美来。对于译者来说，原文有什么样的艺术性就应该反映什么样的艺术性。原文的语言艺术风格各异，有的清丽委婉，如涓涓细流；有的雄浑奔放，如滔滔大海；有的艳丽多姿，如灿烂的山花；有的深沉含蓄，如秋夜的星空。译者必须反映原文不同艺术特点的这种客观存在。译文的科学性来源于原文，译文的艺术性来源于审美客体——原文的艺术性。译者应努力再现原文的艺术性。对于不同功力的译者而言，同一原文的不同译文的艺术性是有差别的。不过，“翻译者永远不可能乘兴之所至，挥洒自如，他受到‘方寸之地’的限制”<sup>[6]</sup>。

### 3.2 构建功能、形式和情景三大系统间的互动角度

系统功能语言学模式的翻译研究首先必然在翻译观上将翻译视为一种发生在译语文化环境下特殊的跨语言/文化的言语交际行为，并从构成言语行为框架的功能、形式和情景三大系统间的互动角度，对影响翻译中“意义”传递——从对原文“意义”的提取到在译文中对“意义”重构过程中所涉及到的多种因素予以描写与阐述（如描写和阐释原文创作与译文重构时的情景差别，这种差别如何影响作者与译者的语篇制作意图、写作策略与语篇功能以及它们在各自的语言形式系统中反映和体现），以此建构翻译研究的描写译学（Descriptive Translation Studies）篇章。不言而喻，这种立足于社会符号学（Social Semiotics）取向的翻译描写不可避免地意味着对以往译论，包括翻译的实质、标准等在内的一系列基本问题的重新审视和评判，并在此基础上提出和论证从系统功能语言学角度对这些问题的新认识和见解，从而完成翻译研究（Theoretical Translation Studies）中的理论建构部分。前述对翻译的描写和理论建构是否符合翻译的实际，并对翻译活动予以有效的指导和合理的阐述，像任何一种翻译理论模式一样，系统功能语言学视角的翻译模式研究还必须再回到翻译实践中，对实际翻译语料作个案分析，一方面对前述归纳、概括和抽象的理论加以验证和修正，另一方面检验它在翻译实践和翻译批评中的应用价值，完成对翻译学应用研究部分（Application Translation Studies）的勾勒。简言之，系统功能语言学模式的翻译研究依循描写—理论—应用之技术路线，而内容则覆盖 Holmes 关于翻译研究所应包含的描写、理论和应用三大模块。把认知意义、交际意义、话语意义同语言的三大元功能即概念功能、人际功能、语篇功能结合起来；又将语言的三大元功能和语言的三大系统即逻辑、语法和修辞系统结合起来，分析语言的认知意义、交际意义和语篇意义以及它们如何通过及物性、情态和主述位关系在语篇的词汇语法层面得到表达。“话语的即时情景”指可观察的、局外人可理解的即时的情景；“话语环境”指更加隐秘的、圈内人才可理解的社会事实；而“话语库”则指更抽象、一般的环境，包括有关该话题的一切<sup>[7]</sup>。

系统功能语言学不仅在思想渊源上师承 Firth 倡导的以意义而非形式为语言研究的方针，而且秉承 Malinowski 关于语言研究中的语境思想，继承 Hjelmslev 的语符学和布拉格学派的语言功能思想，始终把语言的实际使用情形，即语言在一定情景下的应用，确立为语言探索的对象，始终把语言在实际情景语境中表达的意义，即言语所发挥的功能作为语言研究的主要关怀，始终把语言交际视为一种社会人（social man）所从事的社会行为（social behavior）。而这种言语行为是在包含着情景、语言（形式）和功能这样三个系统的行为框架里运行，因此把对情景、语言（形式）、功能等系统的描写（对语言、功能和情景三大系统及其各自的支系统和支系统里的子系统，即系统的系统进行描写，如对功能支系统里的概念功能、人际功能、语篇功能子系统，语言（形式）支系统里的及物性、语气、情态和主述位、信息子系统，情景支系统里文化语境及其属下语类结构和直接语境及其语域等子系统的描写和阐释，及彼此及其属下语类结构和直接语境及其语域等子系统的描写和阐释）及彼此之间关系的阐述（即语言形式与情景之间的建构和限定：一定的语言形式建构一定的情景语境，而一定的语境又决定了选择一定的语言形式；意义（功能）与措词（wording）之间的选择与体现：意义与语言形式（即措词）间的选择范围，形式对功能的体现关系）作为其语言研究的出发点和归宿。

由此,不难看出,它对“意义”的关注已从传统的脱离语境(context free)的静态、狭隘的词语、句子“意义”的描写,转向了对社会、文化语境下动态的、语言使用中的“意义”,即话语的“功能”、“交际价值”的发掘和阐释。翻译,作为人类言语行为系统里的一种特殊形式,由于涉及到两种言语行为系统,而两个系统在意义、形式和情景上又常常各不相同,因而翻译牵涉到的因素又远较单语交际的情形复杂。

### 3.3 语言受到文化语境、情景语境和上下文语境三者的共同影响

文化语境指交际者的文化背景,包括交际者个人经历这样的小背景和整个社会文化这样的大背景。情景语境指语篇含义会随交际话题、交际者的变化而变化。上下文语境指语篇中字词会受到周围字词的影响。语境这三个层面是相互关联的整体,它们组合起来构成语境整体配置,来限制语言的意义潜势<sup>[8]</sup>。在翻译中,这三者的组合情况更为复杂,两个语篇受各自语境的影响,当译者在面对两个语篇时,他面对的也是两个不同的语境。两个语境中有相同之处,也有不同之处,相同之处不会对两种语言的交际产生影响,但对于不同之处,译者就必须在译文中找到与原文相对应的表示方法。此外,语境对语言使用的影响表现在对每个结构层面形式的选择上,比如句法层、语义层和语用层<sup>[9]</sup>。每个结构层面都存在多种选择,很难说哪一个最合适,所以译者在翻译过程中必须考虑像交际背景、交际者和交际渠道这样的语境因素,也就是说,在翻译过程中,译者的选择是由语境决定的<sup>[10]</sup>。具体说来,对待翻译策略,翻译批评者应该在看译作满足了翻译的伦理目的和作用之后,首先看翻译是否准确地传达了原文的信息,表现出对原作和原作者的忠实,然后看译作是否是译文读者所接受的,到底采取“异化”还是“归化”的策略要看读者的层次、心理诉求和受众群体的伦理标准等<sup>[11]</sup>。当然,在翻译过程中如果发现有些内容对目标读者不利,译者便采取了删减的方法,或者如果发现读者对某一内容或思想有所不理解,译者便添加注释将其解释清楚,抑或是在某一特殊的历史时期,在译介异质文化和文学作品的同时,适当根据原文进行发挥,这些都是可取的<sup>[12]</sup>。

## 4. 结论

翻译本身的复杂性以及研究者基于视角、兴趣、能力、精力等因素也决定了系统功能语言学对翻译的探索,与其它语言学视角的翻译研究和文化学派的翻译一样,不可能解决翻译的所有问题。因此我们不能因为系统功能语言学没有触及翻译里的一些问题而责难或否定其价值。翻译本身的复杂性、翻译研究学科的属性决定了任一单一的理论都不可能解决其全部的问题。另一方面,虽然从系统功能语言学的视角对翻译里的一些问题的描述和探讨所得出的结论与其它的角度而得出的结果在内容没有多少不同或者说有不少雷同,但这同样不能说没有意义,因为方法的创新同样是学术的进步和繁荣的标志。

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## Research on the Development of Leisure Sports Tourism in Qingdao in the Post-Qingdao 2015 World Leisure Games

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**Keywords:** Leisure sports tourism; Qingdao 2015 World Leisure Games; Strategy.

**Abstract.** By field observation, interviewing experts, this thesis attempts to figure out how to develop the sports leisure tourism in Qingdao after the World Leisure Games. It is found out that Qingdao should strive to develop sports leisure tourism industry with the rising international visibility after the competition and a number of international standard stadiums. Five specific measures are suggested as follows. First, introduce favorable policies to support the sports leisure tourism. Second, strengthen the cooperation among different departments to take the marketability path. Third, construct the leisure sports theme park. Fourth, develop various special tourism products to meet different customer needs. Last, purchase the personal insurance to ensure safety.

## 从后“休体大会”谈青岛市休闲体育旅游的发展

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**关键词:** 休闲体育旅游; 休体大会; 对策

**中文摘要.** 本文采用实地考察, 专家访谈法对休闲体育大会后, 如何发展青岛市休闲体育旅游进行了研究。结论表明, 青岛市应该抓住赛后国际知名度大幅提升以及拥有大量符合国际标准的体育场地的优势, 大力发展青岛市休闲体育旅游业。具体措施包括1) 政策利好, 政府支持2) 强化部门合作, 走市场化道路3) 打造青岛市休闲体育主题乐园4) 开发丰富的旅游产品, 满足不同需求5) 购买人身保险, 保障安全。

### 1. 引言

世界休闲体育大会的胜利召开, 全世界的休闲体育人士齐聚青岛莱西, 给青岛的国际知名度又添一个重量级的砝码。同时也给当地留下了许多场馆设施。这些场地设施可以用于比

赛，也可以用于休闲。当然也可以将二者合二为一，充分发挥后“休体大会”场馆设施的优势，大力发展青岛市休闲体育旅游事业。

## 2. 何为休闲体育旅游

对于休闲体育旅游的概念目前学术界还未达成一致意见。笔者在比较、分析广大学者观点的基础上，认为学者顾兴全、于可红的观点比较全面。休闲体育旅游是人们离开常住地以积极的身体活动为主要内容而进行的能促进身心调节、达到自我愉悦需要的一种活动形式<sup>[1]</sup>。随着我国城市化、工业化进程的加快，工作压力大，生活节奏快的城市居民，身体很容易处于亚健康，对自然和健康尤其渴望。因为休闲体育旅游具有参与者自选性强，参与性高，活动内容刺激而又娱乐性强等特点而收到广大休闲旅游者的青睐。目前在我国也得到了一定程度的开发。例如海南省，体育已成为海南旅游业的重要催化剂；吉林省，北大湖体育旅游经济开发区已建设成为国内重要影响力的休闲体育旅游胜地<sup>[2]</sup>。青岛因具备便利的旅游条件和丰富的旅游资源，而被誉为全国知名的海滨旅游城市，再加上千载一时的举办世界休闲体育大会（简称休体大会）的大好时机，应抓住时机加快发展。

## 3. 休体大会为青岛市休闲体育旅游发展提供契机

红瓦、绿树、碧海、蓝天的青岛拥有独特的人文和自然景观。山、海、城交相辉映，是中国环境最好的城市之一。集“全国文明城市”，“国家卫生城市”，“国家园林城市”和“全国优秀旅游城市”等称号于一身。青岛经济发展迅速，独具海洋科研优势，众多的知名企业和知名品牌，使得青岛逐渐走向“休闲城市”之列。

2012年10月3日，在意大利里米尼市，作为世界休闲组织秘书长的克里斯多夫·爱丁顿博士宣布，将于2015年在中国的青岛举办第二届世界休闲体育大会。休体大会为何花落青岛，这与青岛丰富的休闲体育资源是分不开的。青岛拥有胶东半岛最大的淡水湖—莱西湖。是全国知名的水上运动、自行车和垂钓等休闲运动场地。广阔的湖水面积有近60平方公里，绵延32公里。是环湖自行车、马拉松、龙舟以及钓鱼等项目的理想训练和比赛场地。除此之外胶东半岛最大的内陆湿地——姜山湿地，也在青岛。13.3平方公里的湿地上生态系统平衡，是青岛市最大的野生动物集散区。目前正被开发成天然优良的休闲运动场地。已经建成并投入使用的水上项目：高尔夫球场，游艇俱乐部。陆地项目：马术俱乐部，越野车俱乐部以及供房车驻扎的营地等。第二届世界休闲体育大会，已于2015年9月在青岛莱西市举行。休闲与体育的融合一方面为当地展示生态休闲环境魅力提供国际性舞台，另一方面也为青岛市大力发展休闲体育旅游业提供难得机遇<sup>[3]</sup>。

## 4. 青岛市发展休闲体育旅游的对策

青岛地区人民生活富裕，“有钱”和“有闲”的社会环境使休闲体育旅游成为可能。但青岛市当前尚存在不容忽视的客源市场不足、开发产品不系统等问题。对此提出以下几点对策。

### 4.1 政策利好，政府支持

青岛市休闲体育旅游的发展离不开政府、政策的扶持。《青岛市旅游十二五规划》中明确规定全力打造“帆船之都”，通过大力引进和积极承办一些国际上高水平的海上运动赛事，从而促进青岛市的体育旅游向更高水平发展。《青岛市体育产业发展规划（2014-2020年）》到本世纪20年代，将青岛市打造成为沿海地区蓝色体育休闲产业发展的高地、国际高端海洋体育赛事的龙头、国内户外运动的天堂，并最终成为国内外知名的蓝色体育运动休闲城市。这些有利政策的颁布，为青岛市休闲体育旅游的发展提供了优越的机遇和环境。

## 4.2 强化部门合作，走市场化道路

休闲体育旅游的发展离不开旅游部门，体育局，体育协会，市规划局、市卫生局以及各个风景区等部门的通力合作。与体育部门的合作，发挥其专业技术特长。与旅游部门合作借助其组织协调的优势，与风景区合作充分发挥其地方资源优势。在协调好上面各部门之间的利益关系的前提下，联合开发、设计独具特色的休闲体育旅游产品，走市场化道路，大力发展青岛市休闲体育旅游。

## 4.3 以世界休闲体育大会为契机，打造青岛市休闲体育主题乐园

将多种娱乐内容、休闲元素、接待设施等集聚在一起的现代旅游基地我们称之为主题乐园。首先它是一个独具文化特色内容的人造景区。另外景区极具市场导向性，讲究现代科技和文化创新<sup>[4]</sup>。发达国家借助主题乐园发展其旅游业成功率极高。2015年世界休闲体育大会在青岛莱西举办，将打造莱西湖莱西姜山湿地，大沽河休闲体育公园等亮点工程，建成后将形成6万亩水面和7万亩的岸边公园，除此之外，还有符合国际比赛标准的，赛马场地，环湖自行车跑道，适宜钓鱼比赛的淡水湖，高尔夫球场地，沙滩足球场地等。地界大，场地设施全，自然风光优美，能够满足人们休闲体育旅游的需求。除此之外，设施配套完善的运动员村，在会后可以改建为酒店，商场等，以此丰富游客的体验。此外，可以借鉴迪斯尼乐园周边与酒店配套的设施建设，如，以购物，休闲和交通网络为一体的大型商业中心保证了游客来到迪斯尼获得超值的休闲体验，同时也确保游客的身心在娱乐中得到彻底的放松。鉴于此，休闲体育旅游主题乐园的建设在注重休闲旅游资源本身的娱乐价值的同时，还要注重活动内容的丰富度、体验性和强娱乐性等特点，并兼顾地方特色。

## 4.4 开发丰富的旅游产品，满足不同需求

休闲体育旅游是较为个性化的旅游活动，参加者多以散客为主。由于不同类人群有相异的旅游动机，因此应依照他们不同的需求来设计相应的旅游产品及旅游路线。见表1

表1 青岛市休闲体育旅游类型表

旅游类型	场地及设施	开展的体育项目	适宜人群
休闲体育游	海滨浴场，崂山风景名胜，竹岔岛、田横岛、灵山岛，	游泳、沙滩运动，垂钓，如游泳、沙雕、沙滩排球、沙滩足球、沙滩羽毛球、沙滩毽球、沙滩露营、沙滩机动车越野	家庭出游
健身体育游	山东青岛华山国家高尔夫俱乐部，青岛国家高尔夫俱乐部，东方(青岛)高尔夫乡村俱乐部，海滨浴场石老人旅游度假区，青岛银海国家游艇俱乐部，青岛金大骏马基地 <sup>[5]</sup>	游泳与沙滩运动，高尔夫球运动，赛马运动	高端消费群体，商务
体育赛事观赏游	市区内体育场馆、奥帆中心、莱西休闲体育大会场馆，中心休闲广场、文化活动中心、姜山湿地公园以及生态休闲体育公园，胶南风河	帆船世界锦标赛-青岛站比赛，全国大学生城市联赛（青岛站），2015年世界休闲体育大会，多级别龙舟比赛	青年人
刺激体育旅游	浮山湾水域，市郊的一些海区，青岛思博拓展训练基地、大公岛等崂山，大青山	海上蹦极，探险旅游、狩猎旅游、激流旅游、攀岩旅游、高山探险、森林探险、秘境旅游、穿越峡谷、丛林野战、高空滑索等，海岛求生	会议，商务
竞技体育	青岛市浮山湾帆船比赛场地	摩托艇、摩托车、帆板、帆船、皮	专业培



旅游		划艇、水上滑水、水上托伞	训人员
保健、康复游	各种疗养院、休养所，温泉度假区	沙疗、水疗、泥疗、气功健身、病后康复理疗、室内器械健身等特色旅游 <sup>[6]</sup>	中青年

针对目前以孩子为出行核心的家庭旅游，更加倾向于购买风光类旅游资源和休闲度假类旅游产品。目的是“扩大子女知识面，寓教于乐”和“探险猎奇，开阔眼界。因此安全系数较高，便利而有冒险性小的，海滩度假村，主题公园旅游，以及农场采摘旅游非常受欢迎。针对老年和病弱群体，联合青岛市多家著名的疗养院，宣传体育旅游的康体、健身、疗养功能。同时要结合多种其他旅游，促成复式开发，如，老年休疗保健游、居民健身游、青春活力探险游、野外生存游以及奥运场馆观赏游等等。

#### 4.5 购买人身保险，保障安全

休闲体育旅游具有潜在风险性和较高的体验性。它不同于走马观花的传统旅游，要求旅游参与者全身心的投入其中。旅游者在参与中获得更多快感、享受和独特的体验的同时，业面临一定的风险。例如攀岩、野外探险、潜水、漂流、帆船等项目都有可能遇到突发的危险。以此，组织部门一定要高度重视安全问题，确保游客的人身财产安全的前提下开展各项活动。防止负面影响的事件发生。我们认为可以采取购票附带买保险的方式。自愿保险和强制保险相结合，强制保险为主。目的是为参与者的人身安全提供保障，防患于未然，非常有必要。

### 5. 结论

2008年奥帆赛，2015年的世界休闲体育大会在青岛的成功举办，给这座旅游城市增添了浓浓的体育色彩。这也为青岛发展休闲体育旅游成为可能。借助赛后国际知名度以及场地优势，青岛具有发展休闲体育旅游的大好时机。并在发展中注意将休体会场地开发成多功能的主题乐园；针对不同旅游人群开发丰富的休闲体育产品；并通过购买人身保险的方式，降低开发者和参与者的风险等措施，保障青岛市休闲体育旅游的顺利发展。

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## Application of Internet Information Technology in Navigation Professional in the Media Platform as an Example

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**Keywords:** Internet; Teaching reform; Navigation technology; Media platform.

**Abstract.** With the continuous deepening of the vocational education teaching reform, internet teaching technology plays an increasingly important role in the practice of vocational education. This paper takes the course of "navigation" navigation technology specialty as an example, developed the college students often use mobile phone software in the social media platform, designed the function of auxiliary teaching media platform, custom menu, background settings, graphic push and other projects, and summarizes and analyzes the experience of the construction of media platform.

## 互联网+信息化手段在航海专业中的应用-以微信平台为例

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**关键词:** 互联网; 教学改革; 航海技术; 微信平台

**中文摘要.** 随着职业教育教学改革的不深入, 基于互联网+的信息化教学手段在职业教育的日常实际中扮演着越来越重要的角色。本文针对高校学生经常使用的手机社交软件中的微信平台进行开发, 以航海技术专业《航海学》课程为例, 对微信平台辅助教学的功能、自定义菜单、后台设置、图文推送等项目进行了设计, 并对微信平台的建设经验进行了总结与分析。

### 1. 引言

随着信息化科技水平的不断提高以及职业教育教学改革的不深入, 信息化教学在职业教育的日常实际中扮演着越来越重要的角色。而随着手机在社会中的广泛应用, 手机在大学

生的日常生活中扮演的角色也日趋重要。在如今高职院校的学生中，智能手机的持有量约占98%以上，然而几乎所有学生使用智能手机基本都只是为了日常沟通联络或者休闲娱乐，极少有学生主动利用手机去学习专业知识。因此，如何利用互联网+技术为学生学习专业知识搭建一个以手机为载体的教学平台、如何更好地调动学生对专业课程的学习热情，成为当今高职院校教学改革的热点话题。

微信公众平台是腾讯公司于2012年8月推出的一款产品，它是建立在庞大的手机用户群基础上的微信软件的扩展功能。简单地说就是为手机微信软件提供了一整套的后台内容管理应用，可以实现对关注用户的信息主动推送、双向交流及个性化多媒体回复。截止到2016年3月，微信注册用户达到9.27亿。这其中，大学生是微信使用群体中所占比重最大的一部分人群。笔者曾在所在学校进行了一个随机调查，发现在校学生微信的使用率可达到100%。因此，通过微信平台进行移动教学是可行的。下面，笔者以航海技术专业《航海学》课程的订阅号微信平台（微信号TJMCHX）为例，从微信平台功能的定位、搭建以及日常微信图文的推送等角度来介绍教学微信平台的设计与应用。

## 2. 教学微信平台的功能设计

腾讯公司现在为微信平台用户开放了自定义菜单、自动回复、第三方接入等功能接口，可满足教学微信平台的多种教学功能，现针对《航海学》课程微信平台的功能设计做以下介绍。

### 2.1 课程教学资源浏览功能

随着各大院校信息化教学的不断开展和推广，多数院校都已经建立了优质课程的资源共享网站以及各门课程的课件库、试题库等信息化教学资源库，因此可以直接将现有课程资源网站上的PPT、电子教材、习题集等电子文档的网址连接，通过关键词回复、自定义菜单等方式设置到微信平台中，使学生可直接在手机微信中浏览学习，满足学生移动学习的需求。

### 2.2 课程互动答疑功能

以往传统的教学中，学生针对课程中的疑难问题主要采用与老师面对面请教的方式，一方面受到了时间空间的限制，另一方面也有部分学生性格腼腆不愿意主动找老师请教，而通过微信平台的实时互动答疑功能可以使学生与教师之间的沟通摆脱时间空间的限制。微信平台可以使用课程聊天室、创建微信答疑群等方式来灵活解决这一问题，也满足了课程的实时网络互动。

### 2.3 微信在线测试功能

由于航海技术专业高校学生在毕业前都需参加国家海事局组织的海船船员适任证书（三副）的统考，考试形式以上机考试、单选题为主，因此形成了大量可供学生日常学习的单选题题库，任课教师可在线设置在线测试试卷，生成网络连接后，通过微信平台的分组推送的功能，发布到自己任课班级学生微信平台，并实现无纸化模拟测试的管理和试卷分析。

### 2.4 校园日常查询功能

除了提供课程日常的教学和测试功能，教学微信平台还可以与第三方平台融合，提供更多的校园查询服务功能，例如：查询课程表、查询期末考试成绩、查询教学日历、查询四级考试成绩、查询图书馆馆藏等实用功能，一方面拓展了微信的功能，更好地为学生服务，另一方面也使学生更愿意长期关注微信平台，更好地对教学进行辅助。

### 3. 教学微信平台的功能实现

#### 3.1 自定义菜单的设置

由于微信软件为微信平台只开放了 15 个自定义菜单的设置权限，综合以上的功能设计，笔者以《航海学》课程微信平台为例，设计了以下菜单：

课程资源主菜单：包括考点分析、电子教材、课程 PPT、课程网站、课程 APP 共 5 个子菜单。

课程互动主菜单：包括在线测试、课程论坛、课程聊天室、课程微信群、教师简介共 5 个子菜单。

校园查询主菜单：包括查期末成绩、查课程表、查四级成绩、查学院校历共 4 个子菜单。

学生可通过微信点击以上的自定义菜单，直接获取到相应内容或服务。从某种程度上来说，相当于把以往的资源共享课网站搬到了手机微信中，并实现了更大程度的功能升级。

#### 3.2 在线测试的设置

平台的在线测试功能，可以通过各高校现有的精品资源共享课中的在线测试功能来实现，在课程网站上发布在线测试题后生成网址连接，再推送网址到微信平台中；也可以通过很多专业的互联网站例如问卷星、问卷网等平台，将本课程的习题库导入到该网站后台内，从而通过进一步设置生成在线测试试卷。相对而言，由于后者网站多数都具备手机网页浏览格式，因此更适合作为微信平台在线测试功能的设置平台。

#### 3.3 手机微信版课程网站设置

在完成了课程资源和互动功能的搭建后，平台还可以依托第三方运营平台的“微网站”功能，将以上全部功能页面网址连接汇总至一个课程“微网站”当中，学生即可通过手机浏览“微网站”直接去选择需要学习的资源内容。

### 4. 教学微信平台的推送内容

微信软件为订阅号微信平台提供了每天可进行一次推送的权限，教学微信平台可充分利用这个机会，推送更多辅助专业教学的图文内容，帮助学生更好了解所学专业的时候，也可以通过学生分享朋友圈的方式，吸引更多其他同专业师生关注平台，形成更广泛的影响。以下总结部分教学微信平台可推送的参考内容：

#### 4.1 课程教学通知

通过微信平台可编辑推送日常的教学通知，如调课、测试、在线测试网址等内容，并通过微信平台的分组推送设置，实现将通知推送到指定班级。

#### 4.2 行业最新动态

教师可搜集整理行业内最新的就业动态、前沿科技动态、一线从业人员的事迹或心得等内容，通过图文编辑后在微信平台推送，使学生树立更牢固的专业思想，并形成更好的职业规划。

#### 4.3 课程教学视频

教师可以将平时在课堂由于时间限制无法完全展示的更多教学视频录像素材，通过整理上传后在微信平台推送，对教学进行补充、拓展。

## 5. 教学微信平台的注意事项

### 5.1 依然要坚持课堂为主的教学模式

微信实现了“引起关注-激发兴趣-搜集资料-讨论交流”的自主学习，但学生的任务量也骤然增加，而且并不是每一项教学内容都适合采用这样的教学方式，所以微信教学难以全面代替课堂教学，传统的教学方式仍然是目前学校教学的主要形态，还是坚持课堂教学为主微信教学为辅的模式。

### 5.2 微信教学要求教师必须拓宽视野，改变教学理念

教师不能满足于固定教学模式，必须跟上时代的步伐，实时更新个人的知识储备，了解教育事业的形势，观察高职学生的变化。教师要熟练微信公众平台的操作，还在课前课中课后整理出大量适合网络平台发布的教学资源，保证信息质量，把控微信群内发言的信息，避免变成聊天场所，使得学生的学习长期处于良性循环当中。

### 5.3 对于学生的微信行为，教师必须给予学习评价和引导

一方面肯定学生的成绩，另一方面及时纠正问题，而且通过适当的监督管理不能让教学微信群变成聊天群，这样才能不断完善和提高微信教学效率，最后通过有效评价机制和期末考试成绩等反馈检验学习效果。微信教学方式不但要让学生掌握理论知识，更重要的是探索适合学生的学习方法，形成科学的指导策略，让学生学会如何解决问题。

## 6. 结语

应产业和社会发展对职业教育的需求，微信平台教学利用网络辅助实现教育资源的传输，构建共同愿望的学习共同体，开发学生团队协作能力，培养学生分享、信任、归属的学习品质，实现专业与岗位的结合，学校与企业的顺利过渡，提高高职航海技术专业学生的综合素质和职业教育的竞争优势，增强职业教育适应人才市场的针对性。

## 致谢

本文为天津市电子计算机应用技术研究会研究项目《互联网+技术在专业教学中的应用研究-以航海专业为例》（2016年度职业院校信息化研究课题）的阶段性成果之一；

本文为天津市高等职业技术教育研究会研究项目《基于微信新媒体的信息化教学手段在高职航海专业的应用研究》（XV431）的阶段性成果之一；

本文为天津海运职业学院研究项目《基于新媒体的信息化教学手段在航海教学及实践中的应用研究》（201508）的阶段性成果之一。

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## Research on the Growth Dynamics of Bio Pharmaceutical Industry

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**Keywords:** Bio pharmaceutical industry; Growth dynamics; Strength of effect; Evolution mechanism.

**Abstract.** There are four parts of the growth dynamics of bio pharmaceutical industry, including driving forces from government, demand, enterprise and innovation. The four driving forces contribute differently to the development of bio pharmaceutical industry, and they are in a dynamic process. With the changes of the life cycle of bio pharmaceutical industry, the effect of these four forces will change and affect the development of bio pharmaceutical industry.

## 生物医药产业成长动力研究

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**关键词:** 生物医药产业; 成长动力; 作用强度; 演化机理

**中文摘要.** 生物医药产业成长动力是由政府推动力、需求拉动力、企业驱动力、创新带动力构成的。这四种动力对于生物医药产业成长的贡献和作用强度有所不同, 并处于一个动态变化的过程中, 随着生物医药产业生命周期的不断变化, 这四种动力的作用强度会随之产生变化, 并影响着生物医药产业的持续成长。

### 1. 引言

生物医药产业是指在医药工业化过程中主要应用现代生物技术, 并综合应用生物学、医学和药学方面的先进技术, 以组合化学、基因治疗、基因组学、蛋白质组学、生物信息学等高新技术为依托, 以分子遗传学、分子生物学、分子病理学和生物物理学等基础学科的突破为后盾形成的高科技产业, 是一个由多个学科的知识和技术共同支撑的体系。生物医药产业具有高技术、高投入、高风险、长周期、创新性等特征, 是永远的新兴产业, 倍受世界各国的高度重视。在全球经济增长乏力的情况下, 生物医药产业保持较快的增长势头。根据IMS统计数据显示, 2006-2011年间, 全球医药市场规模由7020亿美元增长到9420亿美元, 年平均增长率为6.06%。其中, 生物医药产业占60%以上, 年平均增长率在10%以上。生物医药产业

发展势头强劲，在区域经济增长中，正越来越发挥举足轻重的作用。研究生物医药产业动力对于促进产业成长具有重要的作用。

对于产业成长动力的研究，国内外学者取得了丰富的研究成果。比较有代表性的观点有产业发展的动力机理、要素推动机理和利益推动机理等。向吉英（2005）构建了由市场需要、技术创新、政策和投资为要件的产业成长简单动力机制模型；王兆峰和杨琴（2010）将产业链和产业组织作为新要件引入产业成长模式中，以此作为旅游产业成长动力分析的基础；刘井建（2012）认为技术推动、需求拉动、市场竞争和政府启动是信息产业成长动力源；杨和财（2008）认为葡萄酒产业的动力源是多种多样的，既有产业间的又有产业内的，既有国际的又有国内的，各种作用力错综复杂地交织在一起共同产生作用；格兰特·福瑞尔（2003）认为在产业发展的初期和中期阶段，主要的动力因素是法律、法规以及公众的环保意识和企业责任（支付能力），在产业发展进入成熟期后，产业发展的主要外部动力因素是基于市场的经济刺激手段、公众的环境意识和企业责任。徐波（2002）认为环保产业发展动力体系由需求动力、制度动力、供给动力、技术动力、市场化动力五部分构成。崔越（2004）提出科技推动是产业化的内动力、市场拉动是产业化的根本动力、政府驱动是产业化的环境动力。李文超和王晓燕（2011）指出主导性高技术产业成长动力由科技创新、市场需求、企业竞争、政府行为四个动力因素的协同作用构成。

综上所述，国内外学者在不同产业研究了产业发展动力，也从不同的切入点分析动力作用特征。但是，对于生物医药产业成长动力的研究较少，由于生物医药产业自身特征的特殊性，决定了其成长动力与其他产业存在着较大的差别，所以，探索生物医药产业成长动力结构、作用机理和演化规律是具有实际运用价值的课题。

## 2. 生物医药产业成长动力源与构成

### 2.1 生物医药产业成长动力源

生物医药产业成长动力源是指生物医药产业形成与发展过程中，直接或者间接促进产业成长的各种动力之和。生物医药产业成长中的动力是包括了多个方面构成的一个动力系统，动力源的特征表现为层次性、系统性、共生性。

生物医药产业成长动力源从作用的层次分为主动力和从动力，主动力是在产业的形成与发展过程中，起到主导作用的动力，主动力主要包括四个，即政府发展经济的推动力（政府推动力）、市场需求的拉动力（需求拉动力）、企业追逐利润的驱动力（企业驱动力）和技术创新的带动力（创新带动力）。从动力是在主动力发挥作用的前提下，进而推动产业进一步发展的动力，从动力包含在主动力内。动力源的特征表明：当主动力发挥作用时，从动力才能更加有效地释放，同时，从动力对主动力也有积极的促进作用或者是反向作用。

### 2.2 生物医药产业成长动力构成

生物医药产业成长动力由四个主动力构成，即政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  相加形成的。每个主动力由若干个从动力构成，对于不同的主动力构成从动力也在明显的差别。政府推动力是由产业战略  $f_{11}$ 、产业政策  $f_{12}$ 、产业服务  $f_{13}$ 、产业管理  $f_{14}$  构成。需求拉动力是由需求偏好  $f_{21}$ 、收入水平  $f_{22}$  和产品价格  $f_{23}$  构成。企业驱动力是由利润  $f_{31}$ 、竞争  $f_{32}$  和产品潜力  $f_{33}$  构成。创新带动力是由技术创新  $f_{41}$ 、产品创新  $f_{42}$ 、制度创新  $f_{43}$ 、市场创新  $f_{44}$  构成。生物医药产业成长动力构成，如图 1 所示。

## 3. 生物医药产业成长动力作用机理

### 3.1 生物医药产业成长动力函数

根据生物医药产业成长动力构成情况，而建立的函数。生物医药产业成长动力函数按照



生物医药产业成长动力源从作用的层次分为两类函数。一是指以成长动力  $F$  为因变量，以政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  为自变量建立的函数。二是分别以政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  为因变量，以从动力  $f$  为自变量建立的函数。本文只研究第一个层次的函数关系，即可以构成函数如下： $F = f(F_1, F_2, F_3, F_4)$ 。

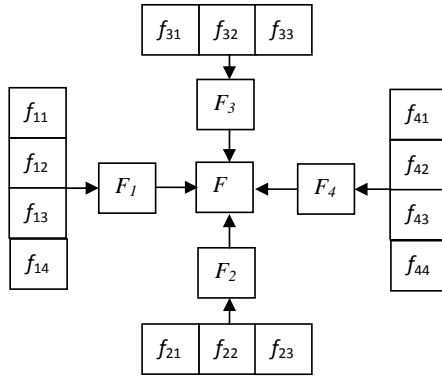


图 1 生物医药产业成长动力构成图

### 3.2 生物医药产业成长动力贡献率

对于生物医药产业成长动力贡献率的研究，主要以函数  $F = f(F_1, F_2, F_3, F_4)$  为研究对象，其他函数的研究与之相同。对函数引入时间变量  $t$ 。

原函数可以表述为： $F_t = f(F_{1t}, F_{2t}, F_{3t}, F_{4t})$ 。

对该函数关于时间  $t$  求全导数，得：

$$\frac{dF_t}{dt} = \frac{\partial F_t}{\partial F_{1t}} \cdot \frac{dF_{1t}}{dt} + \frac{\partial F_t}{\partial F_{2t}} \cdot \frac{dF_{2t}}{dt} + \frac{\partial F_t}{\partial F_{3t}} \cdot \frac{dF_{3t}}{dt} + \frac{\partial F_t}{\partial F_{4t}} \cdot \frac{dF_{4t}}{dt}$$

将上式两端除以  $F_t$ ，并定义参数  $e_{F_1} = \frac{\partial F_t}{\partial F_{1t}} \cdot \frac{F_{1t}}{F_t}$  为  $F_1$  的贡献率，并定义参数  $e_{F_2} = \frac{\partial F_t}{\partial F_{2t}} \cdot \frac{F_{2t}}{F_t}$  为  $F_2$

的贡献率，并定义参数  $e_{F_3} = \frac{\partial F_t}{\partial F_{3t}} \cdot \frac{F_{3t}}{F_t}$  为  $F_3$  的贡献率，并定义参数  $e_{F_4} = \frac{\partial F_t}{\partial F_{4t}} \cdot \frac{F_{4t}}{F_t}$  为  $F_4$  的贡献率。

则有：
$$\frac{dF_t}{F_t} = e_{F_1} \frac{dF_{1t}}{F_{1t}} + e_{F_2} \frac{dF_{2t}}{F_{2t}} + e_{F_3} \frac{dF_{3t}}{F_{3t}} + e_{F_4} \frac{dF_{4t}}{F_{4t}}$$

可见，此式可以解释为产业增长率，是由以政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  的增长率与各自贡献率的乘积决定的。

### 3.3 生物医药产业成长动力作用强度

对于生物医药产业成长作用强度，可以由政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  贡献率的大小来决定。对于参数  $e_{F_1}$ 、 $e_{F_2}$ 、 $e_{F_3}$ 、 $e_{F_4}$  的数值的大小，决定了每一个动力对产业成长动力作用强度的大小。参数的数值越大说明作用强度越大，参数的数值越小说明作用强度越小。这些参数的数值是一个变化量，也就是在生物医药产业成长的不同阶段，表现出来的作用强度会存在着一定的差别。

## 4. 生物医药产业成长动力演化规律

根据产业生命周期理论，生物医药产业成长也为四个阶段，分别是形成期、成长期、成

成熟期和变革期。在这四个不同的阶段，政府推动力  $F_1$ 、需求拉动力  $F_2$ 、企业驱动力  $F_3$ 、创新带动力  $F_4$  起到不同的作用，并处于动态变化过程之中。在生物医药产业形成期，生物医药产业成长动力是政府发展经济的推动力，政府推动力起到了决定性作用，同时，创新的带动力也会发挥，很显然，政府推动力处于主导地位，创新带动力处于次要地位。在生物医药产业成长期，产品市场需求的拉动力和企业追逐利润的驱动力开始发挥重要作用，资金实力雄厚的大型企业进入生物医药产业，同时，科技创新型企业也会主动介入生物医药产业的技术创新与产品创新。在这一时期，需求拉动力和企业驱动力共同作用，两个动力几乎是相当的。在生物医药产业成熟期，企业追逐利润的驱动力成为了主导力量，大型企业依靠自身的核心技术、专利技术，控制市场份额，保持其市场竞争优势甚至获取垄断地位。这一时期，市场已经基本稳定了，起到关键推动作用的是企业驱动力和创新带动力。在生物医药产业变革期，政府发展经济的推动力、企业追逐利润的驱动力和创新带动力又重新组合发挥作用。生物医药产业动力演化过程，如图 2 所示。

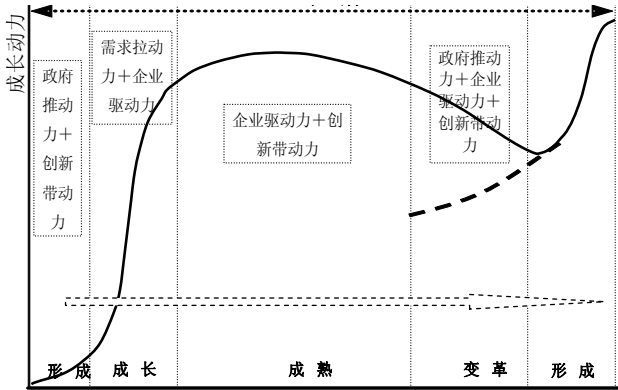


图 2 生物医药产业成长动力演化机理

5. 结论与建议

通过以上研究得出结论如下：第一，生物医药产业成长动力是受多种因素影响，并由多种动力构成的，其中的主要动力包括政府推动力、需求拉动力、企业驱动力、创新带动力。第二，生物医药产业成长动力贡献和强度，决定了四种主要动力作用的大小。第三，生物医药产业成长动力处于一个动态变化的过程中，随着生物医药产业生命周期的不断变化，这四种动力的作用强度会随之产生变化，并影响着生物医药产业的持续成长。

在认识了生物医药产业成长规律的基础上，为了使生物医药产业更加快速而且持续地成长，提出以下两点建议：第一，基于政府层面，要了解生物医药产业所处的不同阶段，发挥政府推动力的作用。在生物医药产业形成期和变革期，各级政府部门要制定各项产业发展的支持性政策，营造良好产业成长环境，协调各种资源，推动生物医药产业成长。第二，基于企业层面，要把握生物医药产业的地位，在产业成长期和成熟期，充分发挥企业推动力和市场配置资源的作用。

致谢

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## Growth Analysis on the First Batch of 28 Listed Companies in Growth Enterprise Market

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**Keywords:** Growth analysis; Growth Enterprise Market; Listed companies.

**Abstract.** This paper constructs a comprehensive growth assessment system with 17 financial indicators which consist of four types of indexes such as the solvency, profitability, cash flow and operating capacity. The growth factors of the listed companies in Growth Enterprise Market (GEM) in china are empirically analyzed using the factor analysis method, based on the annual reports data of the first batch of 28 listed companies in GEM from 2010 to 2014. The conclusion can be drawn that the growth of listed companies in GEM is significantly related to the profitability, but it is rarely related to a single solvency, cash flow and operating capacity; in order to promote healthy growth of the listed companies in GEM, it is necessary to realize the coordinated development of the solvency, profitability, cash flow and operating capacity.

## 首批28家创业板上市公司成长性分析

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**关键词:** 成长性分析; 上市公司; 创业板

**中文摘要.** 本文构造了由偿债能力、盈利能力、营运能力和现金流量等四类共17个财务指标组成的成长性综合评价体系。利用首批28家创业板上市公司2010-2014年年报数据, 采用因子分析法实证分析影响我国创业板上市公司成长性的因素。得出的结论有: 创业板上市公司的成长性与盈利能力显著相关, 单一的偿债能力、现金流量和营运能力对成长性的影响并不明显; 只有实现四大能力的协调发展才能促进创业板上市公司的健康成长。

## 1. 引言

企业的成长性是指企业在充分利用内部资源获取外部资源的过程中，规模逐渐扩张，组织结构进一步优化，其显著的外部表现为销售增长、利润增加，企业规模扩大。2009年10月30日，28家中小企业在深圳证券交易所创业板正式挂牌上市，标志着我国创业板市场正式开启。在创业板上市的公司大多是一些行业地位尚不突出，经营状况不稳定的发展初期的高新科技中小企业，这对于投资者来说存在较高的投资风险，对于经营管理者来说也存在着较高的经营风险，因此，实证分析创业板上市公司的成长性具有重要的现实意义。

## 2. 样本选取与数据来源

截止2014年12月31日，有411家公司在我国创业板上市，主要涵盖了制造业、信息传输、软件和信息技术服务等十二大领域，首批28家创业板上市公司的行业分布是：制造业有17家，信息技术业有5家，科研服务业有2家，批发零售业、运输仓储业、卫生、文化传播业各1家。首批创业板上市公司具有多年持续上市的特点，有较为完整的年度财务报表资料。为了动态的分析创业板上市公司的成长性，选取了首批28家创业板上市公司作为研究的样本。成长性分析需要动态比较，样本数据太少不具有说服力，为了使样本具有可比性，研究结论具有现实指导性，本文最终选取了首批28家创业板上市公司2010-2014年合计140个样本。资料来源主要根据网易财经和其他财经网站公布的各年财务报表数据和公司公告整理和计算所得。

## 3. 成长性评价体系的构建

本文借鉴了国内外学者们的文献研究成果，结合指标选取的原则和创业板上市公司的实际情况，选取了偿债能力、盈利能力、营运能力、现金流量四个大类方面共计17个具体财务指标来综合分析创业板上市公司的成长性，选择的具体指标构成创业板上市公司成长性评价指标体系，具体如表1：

表1 创业板上市公司成长性评价指标体系

指标类型	变量代码	指标名称	单位	表达式
偿债能力	X1	流动比率	%	流动资产/流动负债*100%
	X2	速动比率	%	速动资产/流动负债*100%
	X3	资产负债率	%	负债总额/资产总额*100%
盈利能力	X4	总资产利润率	%	利润总额/总资产平均余额*100%
	X5	主营业务利润率	%	营业利润/主营业务收入*100%
	X6	总资产净利润率	%	净利润/总资产平均余额*100%
	X7	成本费用利润率	%	利润总额/成本费用总额*100%
	X8	营业利润率	%	营业利润/营业收入*100%
	X9	销售净利率	%	净利润/营业收入*100%
	X10	销售毛利率	%	销售毛利/营业收入*100%
营运能力	X11	固定资产周转率	次	营业收入/固定资产平均余额
	X12	总资产周转率	次	营业收入/总资产平均余额
	X13	流动资产周转率	次	营业收入/流动资产平均余额
现金流量	X14	经营现金净流量对销售收入比率	%	经营现金净流量/销售收入*100%
	X15	资产的经营现金流量回报率	%	经营现金净流量/总资产平均余额*100%
	X16	经营现金净流量与净利润的比率	%	经营现金净流量/净利润*100%
	X17	现金流量比率	%	经营现金净流量/流动负债*100%

## 4. 因子分析过程

### 4.1 计算相关性和构造因子变量

首先利用SPSS17计算各指标之间的相关性，得到各因子的相关系数矩阵（此表略），相关系数矩阵显示各指标之间存在较强的相关性，适合做因子分析。公因子方差表显示了这17个变量的共同度，若采用主成分分析方法提取所有17个特征根，变量的共同度均为1。数据中仅仅资产负债率的信息丢失得较多，每一个变量的共性方差都大于0.5，并且方差数值大约都在0.7以上，说明各变量的信息基本都能被因子解释，提取因子的总体效果是比较理想的。

### 4.2 KMO检验及Bartlett球度检验

利用SPSS17对标准化后的数据进行KMO检验及Bartlett球度检验，检验结果如表1所示。KMO抽样的检验值为0.791，比较适合做因子分析。Bartlett检验的检验值为4054.289，显著性水平为0.000，低于显著性水平0.05。综合以上两项检验结果，可知适合对数据做因子分析。

表1 KMO及Bartlett检验结果

取样足够度的 Kaiser-Meyer-Olkin 度量。	.791
Bartlett 的球形度检验	4054.289
df	136
Sig.	.000

### 4.3 提取因子

表2 特征值及方差贡献表

成份	初始特征值			提取平方和载入			旋转平方和载入		
	合计	方差的 %	累积 %	合计	方差的 %	累积 %	合计	方差的 %	累积 %
1	7.65	45	45	7.65	45	45	5.9	34.71	34.71
2	2.89	16.98	61.98	2.89	16.98	61.98	2.94	17.31	52.01
3	2.05	12.08	74.06	2.05	12.08	74.06	2.72	16.00	68.01
4	1.62	9.53	83.59	1.62	9.53	83.59	2.65	15.59	83.59
...	...	...	...	...	...	...	...	...	...
17	0.00	0.01	100						

由表2可以看出，第一个因子的特征值为5.90，解释了原有17个变量总方差的34.71%。前4个因子的累计方差贡献为83.59%，大于80%，并且只有它们的特征值取值大于1。说明前4个因子基本包含了全部变量的主要信息。所以提取的因子能够概括出总体的绝大多数的信息，使信息丢失的比较少，是较为理想的。

### 4.4 建立因子载荷矩阵和因子命名

通过SPSS17软件，构建旋转后因子载荷矩阵表，如表3所示。表3显示因子1在营业利润率、销售净利率等变量上的载荷较大，这些指标主要反映盈利能力，因此，因子1为盈利能力因子，因子2在经营现金流量对销售收入、资产的经营现金流量回报率、资产的经营现金流量回报率上的载荷较大，这些指标主要反映现金流量能力，因此，因子2为现金流量因子，因子3在流动比率、速动比率和现金流量比率上的载荷比较大，这些指标主要反映短期偿债能力，因此，因子3为偿债能力因子。因子4在总资产周转率、流动资产周转率、固定资产周转率上的载荷较大，这些指标主要反映营运能力，因此，因子4为营运能力因子。

表3 旋转后的因子载荷矩阵

	成份			
	1	2	3	4
流动比率	0.186	0.031	0.952	-0.179
速动比率	0.183	0.041	0.953	-0.183
资产负债率	-0.478	-0.291	-0.370	0.459
总资产利润率	0.878	0.244	0.023	0.127
主营业务利润率	0.798	0.190	0.178	-0.175
总资产净利润率	0.880	0.243	-0.005	0.177
成本费用利润率	0.810	0.027	0.247	-0.199
营业利润率	0.914	0.031	0.185	-0.128
销售净利率	0.899	0.017	0.176	-0.182
销售毛利率	0.796	0.174	0.178	-0.137
固定资产周转率	-0.244	-0.390	0.092	0.701
总资产周转率	-0.082	0.060	-0.131	0.967
流动资产周转率	0.032	0.250	-0.265	0.848
经营现金净流量对销售收入比率	0.363	0.821	0.164	0.007
资产的经营现金流量回报率	0.363	0.875	0.090	0.134
经营现金净流量与净利润的比率	-0.114	0.843	-0.008	-0.102
现金流量比率	0.380	0.546	0.667	0.110

#### 4.5 建立因子得分函数

通过SPSS17构建因子得分函数系数矩阵，根据因子得分函数系数矩阵，可以得出因子得分函数为：

$$F1 = -0.066X1 - 0.068X2 - 0.024X3 + 0.184X4 + 0.144X5 + 0.190X6 + 0.158X7 + 0.191X8 + 0.188X9$$

$$+ 0.147X10 + 0.004X11 + 0.024X12 + 0.039X13 - 0.026X14 - 0.020X15 - 0.129X16 - 0.039X17$$

$$F2 = -0.052X1 - 0.048X2 - 0.068X3 - 0.007X4 - 0.015X5 - 0.009X6 - 0.088X7 - 0.098X8 - 0.099X9$$

$$- 0.023X10 - 0.174X11 - 0.004X12 + 0.077X13 + 0.295X14 + 0.316X15 + 0.375X16 + 0.145X17$$

$$F3 = 0.421X1 + 0.421X2 - 0.056X3 - 0.078X4 - 0.030X5 - 0.085X6 + 0.009X7 - 0.023X8 - 0.032X9$$

$$- 0.024X10 + 0.181X11 + 0.064X12 - 0.039X13 - 0.002X14 - 0.025X15 - 0.051X16 + 0.270X17$$

$$F4 = 0.050X1 + 0.047X2 + 0.146X3 + 0.080X4 - 0.031X5 + 0.098X6 - 0.025X7 + 0.002X8 - 0.022X9$$

$$- 0.014X10 + 0.322X11 + 0.394X12 + 0.321X13 + 0.000X14 + 0.042X15 - 0.089X16 + 0.121X17$$

其中，F1、F2、F3、F4分别代表盈利能力、现金流量、偿债能力和营运能力。X1~X17代表的指标如前面表1所示。

按各因子的特征值对总方差的贡献比计算得出成长性总得分F：

$$F = 34.705/83.592F1 + 17.305/83.592F2 + 15.997/83.592F3 + 15.585/83.592F4$$

$$\text{得到：} F = 0.4152F1 + 0.2070F2 + 0.1914F3 + 0.1864F4$$

#### 4.6 计算成长性总得分

在经过因子分析后，本文将选取的创业板28家公司2010-2014年的财务数据代入因子分析表达式中，得出各企业的成长性的4个因子得分、总得分和综合排名，其中，样本公司近5年成长性总得分排名前10和后10的公司如表4。

表4 成长性得分及排名表

股票代码	股票名称	年份	F1得分	F2得分	F3得分	F4得分	F总得分	排名
300003	乐普医疗	2011	2.9838	-0.0472	2.2851	0.0410	1.674	1
300003	乐普医疗	2010	3.2874	0.4424	0.8744	-0.2432	1.579	2
300016	北陆药业	2010	-0.6905	0.3469	8.3517	-0.6355	1.502	3
300017	网宿科技	2014	1.5274	1.5640	-0.0754	1.9397	1.305	4
300003	乐普医疗	2012	1.9708	0.0599	1.6911	-0.2515	1.107	5
300012	华测检测	2013	0.7548	1.6676	0.0951	0.7135	0.810	6
300017	网宿科技	2013	0.7909	1.2599	-0.1350	1.2942	0.805	7
300005	探路者	2012	0.7300	1.3528	-0.5863	1.5292	0.756	8
300016	北陆药业	2011	0.2889	0.4828	3.0283	-0.2824	0.747	9
300026	红日药业	2013	1.4850	0.1256	-0.8404	1.3112	0.726	10
300021	大禹节水	2010	-0.4878	-1.5158	-0.5066	-0.3893	-0.686	131
300006	莱美药业	2014	-0.7449	-1.2605	-0.5952	-0.0572	-0.695	132
300021	大禹节水	2011	-0.6058	-1.2045	-0.6308	-0.4228	-0.700	133
300021	大禹节水	2012	-0.7566	-1.0240	-0.6441	-0.3096	-0.707	134
300008	上海佳豪	2012	-0.5922	-1.3743	-0.1605	-0.8308	-0.716	135
300011	鼎汉技术	2012	-0.7207	-1.7625	0.3228	-1.0103	-0.791	136
300022	吉峰农机	2014	-3.0729	-0.6746	0.4610	1.5274	-1.043	137
300028	金亚科技	2013	-2.5629	-0.1746	0.0726	-0.7565	-1.227	138
300023	宝德股份	2013	-3.1815	0.8176	0.3036	-1.7161	-1.413	139
300023	宝德股份	2012	-2.6769	-1.0507	0.9439	-1.4316	-1.415	140

## 5. 分析结论

本文从样本公司成长性综合得分中抽取排名前十和后十的样本公司进行对比分析，详见表4。表4显示排名前十名的公司有：乐普医疗3次、北陆药业2次、网宿科技2次、华测检测1次、探路者1次、红日药业1次，这十家公司的成长性综合得分均在0.7以上，排名后十名的公司有：大禹节水3次、宝德股份2次、吉峰农机1次、金亚科技1次、鼎汉技术1次、莱美药业1次、上海佳豪1次等，这十家企业的综合得分都在-0.7以下。而且乐普医疗、宝德股份、大禹节水等公司的成长性综合得分在近5年有持续靠前或靠后的状况，具体结论如下：

### 5.1 成长性与盈利能力显著相关

对F1盈利能力因子而言，乐普医疗、网宿科技、红日药业在该因子上的得分都是处于领先水平，说明企业成长性高低与企业的盈利能力存在密切联系，企业的财务目标是实现价值最大化，在以上因子分析中，盈利能力对成长性综合评价得分的权重达到了41.52%，表明了它对公司成长性的影响最大。根据得分的相关性分析结果可知F成长性综合得分与F1盈利能力因子的相关系数为0.776，属于显著相关。在综合评价企业成长性时，应该赋予影响较大因子以较高权重，从而客观反映企业成长状况。企业只有拥有较强的盈利能力，才能为企业未来的发展提供内部权益资金，具备了成长所需的资金保证，才能实现健康快速增长。

### 5.2 现金流量对公司的成长性影响不明显

对F2现金流量因子而言，上海佳豪、金亚科技、新宁物流、宝德股份近几年的现金流量因子得分均位于样本公司前列，而这四家公司的成长性综合得分并不高，均位于较后，分析其中的原因发现，上述四家公司的其他三个因子得分均为负值，表示它们的盈利能力、偿债能力、营运能力并不强，仅是获现能力较强，现金流量相对充裕，持有过多的现金流量会丧失机会收益，影响公司的总体盈利能力，从而影响综合的成长性。必须促进现金流量、偿债能力、营运能力协调发展，才能实现健康发展，实现企业价值最大化的理财目标。



### 5.3 偿债能力对公司的成长性影响不明显

对F3偿债能力因子而言,虽然有些公司偿债能力因子得分高成长性综合得分也高,从乐普医疗、北陆药业看出其偿债能力因子得分高综合得分也高;有的公司虽然偿债能力因子得分较低,但因其他3个因子的得分较高,最后综合得分也较高,如探路者2012年偿债能力因子F3得分为-0.5863,红日药业2013年偿债能力因子F3得分为-0.8404,上述两家公司综合得分也排名在前十名。有的公司虽然偿债能力因子得分较高,但因其他3个因子的得分较低,最后综合得分也并不理想,如宝德股份2012年偿债能力因子F3得分高达0.9439,成长性综合得分F排名在所有样本公司中最低。相关性分析的结果也显示F成长性综合得分与偿债能力因子F3的相关系数仅为0.359,因此,虽然偿债方面的抗风险能力在企业成长中的作用很大,但不一定具备较强抗风险能力就可以拥有较强的成长能力,可能因为企业资产中大部分以货币资金形式留用来偿债导致发展壮大规模上的资金短缺,因而制约了企业的成长性。

### 5.4 营运能力对公司的成长性影响不明显

对F4营运能力因子而言,吉峰农机2010-2014年营运能力因子得分排名均在样本公司前列,但从成长性综合得分来看,明显发现吉峰农机的综合得分与营运能力得分的排名差距悬殊,特别是2013年和2014年成长性综合得分明显偏低,由于吉峰农机没有准确定位目前发展所处阶段,出现了成长性综合能力较差的局面,创业板上市公司作为一个新兴行业,在市场上尚不成熟,需要积累经验,根据实际情况做出合理投资决策。

## 6. 结束语

本文主要从成长性评价体系的构建入手,结合我国创业板上市公司的成长现状及成长理论,选取了4个方面共计17个指标,对我国首批28家创业板上市公司的成长性进行实证分析,但在分析过程中,只选取了首批28家创业板上市公司2010-2014年的财务数据作为研究对象,实证分析尚未涉及影响创业板上市公司成长性的非财务指标,关于这方面的研究将在其他相关研究中展开。

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# The Bubble in China Real Estate Industry and Its Feasible Resolution

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**Keywords:** Real estate bubble; Land finance; Investment; Channel.

**Abstract.** At present the foam in the real estate industry has become one of the most serious problems for the development of China economic. So has it done to the construction of harmonious society and the stability of financial system. To solve the foam problem has become one of the most critical problem. If it is not resolved suitable, it can cause many serious problems in economic and politics fields. In the paper we discussed the reasons for the formation of the foam and then put forward the strategies to solve this problem.

## 中国房地产泡沫及化解对策

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**关键词:** 房地产泡沫; 土地财政; 投资渠道

**中文摘要.** 当前房地产泡沫已经到了严重地阻碍我国经济的进一步发展，影响和谐社会的建设，威胁金融系统的稳定的程度。因此解决房地产泡沫问题成为当前我国一个重要的难点。本文分析了房地产泡沫形成的主要原因，提出了顺利解决房地产泡沫系统策略。

### 1. 引言

房地产在我国经济发展过程中起着较为重要的作用，它带动了经济的快速发展。据统计，房地产行业带动了六十多个下游相关产业的发展，为当地GDP增长带来显著效果，所以房地产的发展受到各地政府的极大重视。同时，房地产经济的发展不仅使当地GDP数字显著提高，而且地方政府通过出让土地获得大量收入，从而为进一步投资提供资金支持。但是，世界上没有一个国家是依靠房地产发展起来的，因此，发展房地产行业不应该成为我国国策。目前全国各地的房价已经远远超出我国城镇居民中等收入水平的购买力，房地产泡沫已经非常明显。

房地产泡沫带来许多问题，这些问题如果得不到有效解决，就会影响到今后我国经济的持续发展，引起社会的巨大不满而导致社会动荡。因此，高房价问题在我国不仅表现为经济问题，也是一个政治问题。在目前经济状况下，我国改革开放以来的制度红利和劳动力低廉

红利已经消失，经济转型就我国而言是一种必然选择。但房地产泡沫会对我国金融体系稳定带来威胁，甚至可能带来系统性金融风险，房地产泡沫还导致社会财富分配扭曲，引发社会不公，阻碍城市化进程。房地产泡沫持续放大导致社会资源大量流入房地产行业，对其他实体经济产生挤出效应，阻碍中国经济结构转型和产业升级。因此，中国房地产泡沫问题已经成为我国经济进一步发展中必须解决的一个重要问题。

## 2. 房地产泡沫的成因

### 2.1 地方政府的土地财政依赖推动地价飙升，推高住房价格

改革开放以来，我国经济取得快速发展，在这一过程中，地方政府的竞争发挥了极大作用。在以经济建设为中心的指导思想下，各级政府主要官员的政绩取决于地方经济的发展速度。在所有推动当地经济增长的方式中，加大地方投资是一种快速便捷的途径。因此全国各地政府部门都对房地产给予高度重视，一是因为房地产产业链长，会带动当地很多下游产业，二是因为在房地产繁荣的同时，地方政府从中获得大量收入。

各地政府的城市建设和招商引资活动，使地方政府对资金需求非常迫切。而在 1994 年我国实行了“分税制”之后，地方政府所能掌握的财力降低较多。通过房地产开发，地方政府不仅可以获得大量的土地出让金，而且可以从商品房的交易中获得大笔的税费。据不完全统计，房屋价格的 70% 被当地政府拿走。因此地方政府对于房地产开发给予相当重视。但是，该过程能够持续下去的必要条件是房价有一个继续上涨的预期。为了达到这个目的，地方政府利用垄断土地供应的优势，放慢土地的供给速度，造成了土地供应紧张。而开发商在取得的土地价格不断飙升的情况下、只有不断提高房屋的销售价格。在当前存款利率很低的情况下，住房价格的不断上升使得银行对住房贷款成为一项安全的优良资产。房屋投机者在房屋价格不断上涨情况下而不断贷款买入商品房，在多方面的合力下，形成了房屋价格只涨不降的现象。

### 2.2 大量的货币供应是导致房地产泡沫的一个根本原因

我国目前流通中的货币供应量充沛，其形成的原因有两个，一个是在“保八”的要求下，政府采用了稳健的货币政策和积极的财政政策，另一个就是我国加入 WTO 之后的经常账户和金融与资本账户双顺差造成的。实际上就我国国情而言，虽然中央银行有一定的独立性并且商业银行在中央银行的约束下贷款规模不会超标。但是在从中央到地方的投资冲动下，投资所需要的资金缺口会通过国有银行的贷款弥补，因此会导致货币超发。同时，在 2007 年秋季美国发生次贷危机后，我国政府做出了 4 万亿投资决定，同时在银行系统又产生了 10 万亿贷款的配套资金。在 2009 年到 2011 年两年的时间里我国的 M2 以很高的速度同比增长，在 2008—2011 各年期末的 M2 存量分别达到 47.5 万亿元、60.6 万亿元、72.6 万亿元、85.6 万亿元人民币的规模，据统计到目前为止有 94.4 万亿元规模的 M2。而在 2008—2011 年各年期末的 GDP 分别达到 31.5 万亿、34.1 万亿、40.3 万亿和 47.2 万亿元人民币的规模。可以看出 M2 的增长速度超过 GDP 增长速度，因此会导致通货膨胀。城镇居民为了自己的资产保值增值，特别是防范银行存款的贬值，许多人选择了购买房产来保值增值，因此促进了房价的上涨。

其次，加入 WTO 之后我国的进出口规模获得巨大增长，连年的大规模贸易顺差且强制性的结售汇制的外汇制度，产生大量的外汇占款。加入 WTO 后，我国丰富且低廉的劳动力资源得到充分利用，并且我国对环境保护的标准低，大量的中国制造产品出口到世界市场上，形成贸易顺差，同时外国资本看好中国经济的发展前途而进行大量投资。中国经济快速增长速度也导致了对人民币升值的预期，在人民币实行与美元挂钩的盯住汇率制度下，大量的热钱流入中国。因此，中国出现了经常项目和金融与资本项目两个方面双顺差的现象，中央银行在双顺差下被动地积累了大规模的外汇储备。到 2012 年 6 月，中央银行的外汇储备规模达

到了 32400.05 亿美元的规模，从而释放了大致有 25 万亿人民币的流动性，到 2012 年 7 月外汇占款达到 235221.27 亿元人民币。而这种外汇占款是中央银行发行的高能货币，在流通中会产生更大规模的存款货币。因此导致国内的流动性泛滥，必然带来通货膨胀，而像房地产这种实物资产的价格必然上涨<sup>①</sup>。

## 2.3 我国收入分配两极分化严重、投资渠道狭窄导致房地产泡沫加剧

我国房价上升的一个重要原因是存在房地产价格会持续上涨的预期和严重的收入分配两极分化现象。首先，这些年来住房价格的只升不降使居民形成一种预期就是房屋价格会持续上涨，这种预期的理由是中国的城市化在未来会持续下去，而土地资源是有限的，城市化的进程必然会有大量的房屋需求，因此，许多城镇居民在投资渠道狭窄的情况下就购买房屋来保值增值。城镇居民收入的两极分化则是推高房价背后的一种重要力量，有许多富裕家庭以及政府官员由于拥有大量的资金，在投资渠道狭窄的情况下，为了实现资产的保值增值，因此购买了大量的房产。

## 3. 房地产泡沫带来的危害

### 3.1 阻碍我国经济的转型

房地产泡沫阻碍中国经济转型。由于房地产的急剧膨胀，大量的资源都集中到与房地产有关的行业。像高能耗、高污染的钢铁行业，在中国房地产繁荣的部分带动下，不仅没有萎缩，反而急剧膨胀。由于房地产的高额利润，国内各个企业都想从中分一杯羹。由于许多企业家从事实业获得利润反而没有从事炒房获得的收益高，因此，许多企业就放弃了实业而进入到房地产业，或者从事房地产开发或者从事炒房，使社会有限的资源过多地涌进房地产行业，导致我国产业结构畸形发展。

高房价透支了社会购买力，使得我国的产业结构优化很难顺利实施。当一个国家的经济发展到一定阶段时，产业结构的调整就成为必然。而对于我国目前的经济发展状况，以政府为主导的投资拉动型经济发展方式，在面临着资源枯竭、环境被毁坏殆尽的情况下，如果不转变经济发展方式，调整产业结构，进行产业升级，我国的经济不仅会陷于滞涨的状态，而且可能引起长期衰退。因此只有大力发展第三产业，加快技术创新才是中国的出路。但是高房价使普通百姓的全部积蓄都投入到购房中，无力进行其他方面的发展和消费，扩大内需就成为空话。同时，高房价会导致年轻人的创业欲望大为降低，不敢尝试其他机会而放弃现有的工作，防止房贷还款出现问题。实际上，世界上任何一个国家的未来决定于其年轻的一代，当一个国家年轻一代被高房价绑在固定的岗位上时，这个国家基本上就没有创新的动力了。当绝大部分实体企业通过辛勤努力获得收益还不如从事投机房地产获得收益高的时候，这个国家的创新就停止了。所以说，高房价严重的阻碍了我国经济的转型。

### 3.2 房地产泡沫增大我国的金融风险

房地产泡沫加大金融风险，并可能导致金融危机。由于房地产业中各种参与者其交易杠杆往往很高，部分参与者资金来源是民间的高利贷，有些参与者则是从银行中获得的大量贷款。一旦房地产价格下降，使用高利贷的交易者就面临着极大的破产风险。而使用银行贷款的参与者在房地产泡沫破灭的时候则会出现现金流问题，无法及时偿还银行的贷款，引起银行系统和实体企业之间债务的连锁反应，出现金融动荡。今年浙江地区出现的许多老板跑路现象就是由于老板所投资的房产价格下降，而老板利用了大量的高利贷或者银行贷款，当这些老板出现了资不抵债时，往往选择跑路，而跑路则导致大面积的债务危机爆发。房地产商采用的经营手法是利用少许资金从政府手中拿到开发的土地，把所开发的土地抵押给银行获得贷

<sup>①</sup> 以上数字来自于国家统计局、中国人民银行以及外汇管理局网站

款，同时对房屋购买者实行预售制，只要各个环节顺利实施，而且房价不断升高，这个游戏就可以继续进行下去。所以在政府限制土地供给的情况下，房地产商会不计一切地拿地，结果各地的地王不断出现，从而推高了房价。房地产泡沫破灭后，房地产价格急剧下降，很多情况下土地价格以及房屋价格会跌破抵押价值，房地产企业大批破产，从事房屋投机的炒房者会变得血本无归。而涉及房地产的贷款会造成金融机构的呆帐、坏帐。实际上由于商业银行都把房地产的贷款看做优良资产，所以中国商业银行中与房地产有关的贷款数量庞大，这部分资产会因房地产泡沫的破灭而危及整个金融系统。

### 3.3 降低民众对政府的信任

对于房地产泡沫问题，应该说政府部门都有了一定的认同，但是在既得利益者的阻挠之下，政府对降低房地产泡沫上面的行动有投鼠忌器表现。所以国务院经常发布限制房地产价格上涨的措施，甚至不得不使用行政限购的办法来阻止房地产价格的上涨。一旦中央政府采取降低或者控制房价上涨的措施，既得利益者就会散布房价下降必定出现灾难性的经济危机的言论来恐吓政府高层，对百姓散布中国房价永远不会降且会大幅度上涨的言论，既得利益者在政府中的实权派则竭力阻止政府所采取的对房地产价格产生实质性影响政策的实施。每次房地产价格调控之后，都会有一波凶猛的价格上涨，所以老百姓调侃“调控”就是空调，降低了中央政府的威信。从世界上来看，许多国家的房地产金融投资功能很小，大部分仅仅具有居住功能，所以在像德国、加拿大、澳大利亚等国家很少有居民通过炒房来进行投资的。

### 3.4 加剧社会两极分化，不利于建设和谐社会

在房地产泡沫变大的过程中，社会财富向房地产商、地方政府以及住房投机者的手中转移，导致社会财富分配两极分化更加严重。由于我国财力有限，社会保障制度还不能满足社会低收入阶层的基本需求，低收入阶层不得不面对着天天上涨的高房价而精神焦虑。许多社会残暴事件的发生与社会低收入阶层的绝望有极大的关系。这种社会财富的两极分化，吞蚀了社会改革发展成果。同时，由于我国历史的原因，人们不患寡而患不均的思想还有很大市场。因此，减轻社会财富两极分化，构建一个以中产阶层为绝大部分的社会结构，是我国政府在收入分配领域中的一个重要目标。减少商品房的投资属性则会把这部分财富均等化，我国投机性商品房的规模非常大，所以降低商品房的投资属性能够降低社会财富的两极分化程度。因此，政府应该在改变商品房的属性上做出努力，降低商品房的投资属性，使住房投机变得无利可图，把房地产市场变成一个满足公众居住需求的市場。

## 4. 化解房地产泡沫的策略

实际上化解中国房地产泡沫并非无计可施，关键是找到降低房地产泡沫的有效手段，其难点在于降低房地产泡沫的同时，同时又不当前经济造成冲击，至少是冲击甚微。因此降低房地产泡沫的思路是既要把这部分泡沫挤出来，还要创造相关需求来承接。这样就不会引起由于房价降低带来的巨大副作用。因此，可以采取以下措施：

### 4.1 消除地方政府的土地财政依赖根源

地方政府是中央政府控制或者降低房价主要阻力之一。地方政府土地财政的根源在于地方政府的支出庞大，其中有巨额的“三公”消费，承担大量的投资。所以地方政府维护高房价也有其不得已而为之的原因。减轻地方政府的土地依赖情况会减少地方政府对房地产价格调控的阻力。因此，必须从改变地方政府的财政支出和财政收入两个方面入手，减轻地方政府的财政压力。

在财政支出方面，首先要严格“三公”消费，而公车消费占了“三公”消费很大比例。有些公车变成了领导家人、司机个人的专用车辆，公车油耗、维修变成了政府的沉重负担，主要领导更是频繁更换新车。实际上，公车消费控制并非没有办法，其中最重要的一条是公

车消费应该接受群众的监督，一旦违反制度要求，相关人员必须受到严厉制裁。其次，要改变各级地方政府中的唯 GDP 论英雄的官员政绩考核办法。唯 GDP 政绩考核办法导致了地方官员的剧烈投资冲动，不仅在房地产还有在基础设施方面，其投资达到了不计一切后果的程度。有些巨额投资的建筑物刚刚使用了几年，就被爆破掉重新再建，公路则是建好后扒掉再建。在建设大跃进的情况下，其质量、规划等等都存在着问题，社会资源浪费严重。因此，必须减轻官员政绩中 GDP 考核的比重，减轻地方官员投资冲动的压力。即使考核官员使用 GDP 指标，也应该考核 GDP 的质量，严厉制裁那些重复投资、胡乱投资的官吏。

在财政收入方面，实行“分税制”以来，地方政府和以前相比财政收入减少，其职责和财力出现一定程度的不配套。即使中央政府实行了转移支付，但转移支付的力度不太大。因此可以考虑调整中央和地方分税的比例，提高地方政府享有税收的比例，减轻地方政府的财政压力。为了减少地方政府为增加卖地收入而对土地出让实行“饥饿疗法”的弊端，可以对地方政府的土地出让金实行与中央政府进行比例分成的办法，甚至中央政府从土地出让金中抽走绝大部分，让地方政府在土地出让中变得无利可图，这样就会减轻地方政府推高地价的冲动，地方政府也不会对中央政府的房地产调控制造很大的阻碍。

#### **4.2 开征房产税，同时对首套住房和改善性住房提供财政金融支持**

现阶段商品房出现大量空置的一个主要原因是，有钱的居民为了实现资金的保值增值而购买房屋投资。我国目前投资渠道非常狭窄，除了存款就是股市，存款利率太低，股市基本上都是亏钱，只有房屋投资这条渠道既安全，又稳妥。这样有钱的居民就大量的投资房屋，大量的资金进入房地产市场，造成许多小区大量房屋空置。广州番禺城管局政委，其名下有 21 套的房产，其中还有豪华别墅，而大部分的房产都是没有装修的毛坯房。因此，对多余房产实行征收房产税则可以把这一部分空置房挤出来，房产税的目的是把空置房挤出市场，而不是对所有的房产征税。同时为了降低开征房产税带来的冲击，对于空置房的征税可以从第三套房开始，并且实行累进税率，这样最终把空置房挤出市场。

为防止征收房屋保有税之后住房价格的急剧滑落而对经济造成冲击，可以在征税的同时，对首套住房提供金融财政支持。对首套住房的贷款实行优惠的税率，增加贷款规模，增加有公积金人员首套房屋公积金贷款的数量。同时，对于首套住房购买过程中的契税等相关税费实行减免的办法，刺激刚性需求。当首套住房交易之后，买房者的装修也会带动大量的相关行业。这样，当大量的空置房被挤向市场时，因这些财政金融政策的刺激，需求也会放大，可以相信房地产行业不会受到巨大冲击。

#### **4.3 发展金融市场，振兴中国股市，增加居民可投资渠道**

中国城镇居民投资房屋一个很大的原因是投资渠道狭窄，并且在股市中除了股票发行者很少有人获得正收益。所以，理性的城镇居民基本上不会在股市中进行投资，因为中国的股市已经成为少数人利用合法的外衣鲸吞散户的市场。所以，必须把中国股市这样一个圈钱市场变成一个真正的投资市场，广大居民的资金才会流向股市，防止大量的流动性对实体经济造成扰乱。同时培育一个良好的金融市场还为我国高新技术企业发展，为我国的产业结构升级提供保障。

#### **4.4 建立全国统一的土地使用调剂市场，增加城市用地供应数量**

因 18 亿亩耕地红线制度，各地政府在土地征用方面受到很大限制，有些发达地区虽然有进一步扩大城镇建设规模的迫切需求，但其城市用地指标非常紧张。可以考虑在 18 亿亩耕地得到保证的前提下，建立全国统一的的城市土地使用指标调剂市场来增加土地指标非常紧缺城市的土地供应。该方法可以参照碳交易市场办法，只要用地城市帮助其他地方开发达不到耕地标准土地使其成为优良的可耕地，用地城市就可以征用本城市同样规模的土地而无需考虑

18 亿亩耕地红线的限制。当然，用土地指标不紧张的地区也可以自己开发达不到耕地要求的土地达到优良耕地标准，把这些开发出来的耕地指标放在全国统一交易市场进行拍卖。需用土地的城市会得到其他地方土地指标的使用额度，从而增加本地区的土地供应，这样至少可以部分化解土地供应紧张的问题。

## 5. 结论

我国的房地产泡沫已经非常严重，这种泡沫对我国社会、实体经济、金融系统带来严重危害。造成我国房地产泡沫的原因有地方政府的土地财政依赖问题、城镇居民收入的两极分化、我国土地供应的 18 亿亩耕地红线限制以及我国金融市场的畸形发展等。解决房地产泡沫的方法应该从解除地方政府的土地财政依赖根源，拓宽投资渠道，对畸形的中国股市实行系统性改革，压迫房地产投机的空间，对居民持有的过多房产实行累进税率，对城镇居民的首套房产和改善性房产需求提供财政金融政策支持。同时建立全国性的土地使用指标调剂市场，增加土地供应数量。以上措施同时展开，将会大大减轻我国房地产泡沫。

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## Based on Historical and Cultural Tourism Resources Development of Popular Culture

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**Keywords:** Popular culture; Cultural resources; Tourism development; Cultural and creative.

**Abstract.** Tourism cultural has a significant civilian characteristics, Mass culture is the development cultural tourism in the starting and ending points. Depth analysis the characteristics of popular culture, with the perspective of civilians, Research on Cultural Tourism Resources Development Problems. Adhere to market-oriented, prominent civilians feelings, Prominent cultural creativity, Strengthening activation rendering. Through straightforward interpretation and entertainment expression, make cultural tourism products with fashion, novelty, technical, participatory, experiential.

## 基于大众文化视角的历史文化旅游资源开发

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**关键词:** 大众文化；文化资源；旅游开发；文化创意

**中文摘要.** 旅游文化具有显著的大众性特征，大众文化是发展文化旅游的出发点和落脚点。深入分析大众文化的特点，以平民化的视角研究历史文化旅游资源的开发问题。坚持市场导向，凸显大众情怀，突出文化创意，强化活态呈现。通过通俗化的解读和娱乐化的表达，使文化旅游产品具有时尚性、新奇性、技术性、参与性和体验性。

### 1. 引言

随着人民生活水平的提高和闲暇时间的增加，大众化旅游时代已悄然到来。而随着旅游业的不断发展，旅游消费需求层次和品位的也在不断提高，人们已不满足于单一的观光旅游，历史文化旅游资源开发越来越受到青睐，旅游与文化的关联度、协同性日益增强，促进旅游与文化深度融合也成为理论界的研究热点。但在旅游开发实践中，却出现了与人们初衷相悖的状况，一些具有重要影响的历史文化资源尤其是史前文化资源的旅游开发，却没有达到人们预期的目的，陷入了“叫好不叫座”的尴尬境地。实践的疑惑促使我们必须进行深刻的反思，去研究出现这种现象的深层次原因，找出问题的根源所在，从而以科学的理念和方式去

对历史文化旅游资源进行合理开发，避免陷入误区。本文以大众文化认同为视角，对历史文化旅游资源的开发问题进行分析。

## 2. 旅游文化的基础是大众文化

旅游与文化有着不可分割的关系，旅游作为最重要的大众休闲方式，其本质上是一种文化活动，是旅游者对寻求异质文化的一种体验。而旅游本身就是一次大规模的文化交流，无论是旅游活动自身所代表的精神文化需求，还是旅游活动对象的文化属性，旅游活动及旅游产业都无可争议地属于人类精神文化范畴。

随着旅游活动的不断深入，文化在旅游中的地位越来越重要、作用越来越明显，“文化是旅游的灵魂，旅游是文化的载体”这一观念已逐渐被人们广泛接受。但也使有些人误以为“有文化资源就可以很好地发展旅游”，以此为基础大力策划开发旅游项目，但实际结果却不尽人意，原因在于看待“文化”的角度不同。“文化”的概念比较宽泛，专家研究侧重的是文化的价值，即文化的内涵；而大众游客偏好的是他们能直接感知和观看的文化，即文化的表层。旅游中的文化价值和文化感知不能混为一谈，文化的研究价值不等同旅游的吸引价值。用文化研究的视角和指导思想去开发大众旅游产品，文化与旅游貌合神离，不符合旅游者对旅游产品的需求，没有市场就不足为奇了。

旅游文化具有文化属性，它除了具有文化的一般特征外，还具显著的大众性特征。旅游文化的大众性特征是指旅游活动参与人数众多，没有阶级分别，是一种大众行为，在旅游过程中旅游者消费是一种平民的、受众面广的文化。大众文化的本质是一种以最广大人民群众的生、享受、发展需要为出发点、归宿点和最高价值目标的人文文化形态。贴近大众文化生活、满足大众文化需要、尊重大众文化权利、反映大众文化理想和提升大众文化人格，是中国大众文化发展方向的基本内容和要求。因此，大众文化是发展文化旅游的出发点和落脚点。

## 3. 大众文化的特点及对文化旅游资源开发的启示

### 3.1 通俗化的解读方式

大众文化不是特定阶层的文化，而是为社会上众多普通人的文化，具有生活化、通俗化、娱乐化和平民性等特点，这就需要大众化、通俗化的解读方式。通俗，即浅显易懂，适合一般人欣赏水平和需要的。大众文化的通俗性是就大众文化与其受众的关系而言的，是一种较为容易接受并且被乐于接受的文化，它接近人们熟悉的生活。通俗化要求其文化内容、表现形式是通俗的、娱乐性的，让人们喜闻乐见的。这种通俗性与大众性一脉相承，其受众的文化层次参差不齐，但并没有因此而减少了大众文化的娱乐性。

### 3.2 娱乐化的表达方式

大众文化总是追求广义的愉悦效果，使公众的消费、休闲、娱乐渴望得到满足。麦克唐纳说过：大众文化的花招很简单，就是想尽一切办法让大伙高兴。大众文化是一种消费文化，社会大众都是普通人，他们对文化的态度，具有明显的世俗消费倾向。在整个社会的文化格局中，大众文化不像精英文化那样强调理性反思，而是注重感性愉悦，它以创造娱乐大众的文化形式，达到吸引社会公众，获得商业利润的目的。因此，感性层面上的娱乐化成为大众文化的显著特征。娱乐本是一种主观性的生命体验，是生命主体的一种内心的情感感受，甚至是一种自然的生理需求。作为感性文化的大众文化恰恰是为了满足生命和生理的娱乐本能，提供一种日常生活中的感性愉悦或娱乐享受。

### 3.3 时尚化的趣味选择

大众文化是一种时尚文化，呈忽起忽落的变化趋势。大众文化在创造出一种模式之后，往往迅速地通过批量化生产，在一定阶段在一定公众群中风行开来，形成时尚潮流。时尚化带来大众文化的流行性，使得大众文化丰富而多样化。从根本上来说，时尚化还是与大众的选择、与大众的审美消费的情感价值取向分不开的。大众流行的审美趣味与审美时尚，是他们的心理需要。因此，大众文化应准确把握大众的审美趣味和审美心理，引领全社会文明健康、积极向上的时代风尚。

### 3.4 动态化的体验方式

以文化旅游为例，以体验文化为核心的旅游者在—个地点会比其他旅游者逗留更长的时间，花更多的钱，参加更多的活动，为的是了解自己背景以外的东西，了解不同的生活方式和文化，体验不同的事情。著名的文化旅游目的地由于其突出的声誉，其所能提供体验的广度和深度，比不那么著名的目的地吸引更大数量的文化旅游者。如美国的迪斯尼主题公园，因其巨额的投资，科学的管理，尤其是作为美国文化的集中代表所带来的巨大声誉，使其成为全世界大人和小孩都流连忘返的乐园。

### 3.5 媒介化的传播方式

大众文化以大众媒介为主要传播媒介，即大众文化主要是在大众传媒的引导下发生、发展和变化的，没有大众传媒，也就没有大众文化。在这个意义上，大众文化也是一种传媒文化。现代社会的人们不仅深深依赖以大众传媒为手段的大众文化产品的服务，而且常常从大众文化提供的消费时尚、消费导向。大众媒介的应用，拓展了大众文化的公共领域和大众文化的对象、范围。正因为大众媒介信息量大、受众人数多，所以大众文化利用现代传媒，大量生产、批量复制，传输大量信息并作用于受众，以此来吸引观众、听众，是大众文化的重要特点。

### 3.6 商品化的经济属性

经济发展和社会大众物质生活水平的提高，人们经济收入和闲暇时间增多，使文化消费成为一种普遍需要，为大众文化的产生和发展提供了现实可能性。而且，市场经济的运行机制为大众文化的商品化创造了适宜的条件。大众文化是市场经济的产物，是文化与经济联姻的结果。作为一种消费文化，大众文化一开始就以商品的形式出现，大众文化活动就是一种伴随商品买卖关系的消费行为。作为文化商品，它必须遵循市场经济的商品化规则，以追求商业价值为目标。大众文化的生产、流通的每一个环节都必须遵照生产经营规则，把握文化市场脉搏，顺应社会大众的消费心理和消费口味，以适应市场的风云变幻，最终达到把文化产品销售出去的目的。

## 4. 基于大众文化认同的历史文化旅游资源开发

基于以上对大众文化特点的分析，开发历史文化旅游资源，必须具有平民化的视角，通过通俗化的解读和娱乐化的表达，使文化旅游产品具有时尚性、新奇性、技术性、参与性和体验性。

### 4.1 淡化“精英”意识，凸显大众情怀

文化旅游产业带来了文化发展进程中的巨大变化，它改变了文化产品的服务对象，最大限度扩大了文化的服务范围，它是精英文化的市场化、平民化、通俗化和大众化。文化旅游的文化不是指—般的文化，而是指特大众文化和通俗文化，是面向大众消费的文化。大众文化是建立在消费者的趣味选择的基础之上的，源自人们内心世界的文化生态和精神生态，又

反过来成为文化旅游发展的社会基础，是文化旅游产业发展的主流文化和核心文化，个性化、多样化、大众化是其基本特征。

历史文化资源的旅游开发，必须借鉴同类景区开发中专家津津乐道，而普通游客不感兴趣的经验教训，突破单一的“遗址展示”模式，按照知识性、可视性、参与性、娱乐性的要求，瞄准旅游市场的需求趋势，突出亮点、创新形式、打造精品。

#### 4.2 摆脱“资源”依赖，坚持市场导向

文化旅游产业是企业主导的市场行为，是要从消费需求来反向思考的产业。文化旅游产业的重心在于产业，文化只是其内容。市场需求是文化旅游产业发展的原动力，对消费者的具有吸引力，为广大的消费者所接受，是打造成功的文化旅游产品的基本前提。它不是艺术家自己喜欢的创意和个性化服务，不能把艺术家、文化人的理念强制消费者接受，而是要从消费者需求的角度出发，去替他们策划和生产出产品。

文化旅游产业发展已经实现从资源导向到市场导向的转型，资源已不再是文化旅游发展的决定性因素，文化旅游不能仅停留在对历史文化资源的浅层开发上，需要用创新的思路和创意的理念指导产业开发方向，从而激活市场和满足市场需求。要按照文化旅游的发展趋势，以旅游市场需求为导向，根据历史文化资源特色，深刻挖掘历史文化内涵，寻求创意的差异，找准切入点和突破口，突出能够引起游客兴趣和共鸣的亮点，把自然资源与人文资源有机结合起来，实施选择性的重点开发。

#### 4.3 打破“硬件”思维，突出文化创意

文化旅游产业是内容产业，文化旅游产品生产是创造性生产，是创新活动，高度依赖创新意识，创造力是核心，是第一生产力。文化旅游不是历史文化的还原和再现，是要靠创新内容来提供产品和服务的，尤其是文化旅游产业的新业态，对创意的依赖大大超过对传统资源的依赖。一切传统的文化资源要想在今天发挥作用，都有一个在今天文化语境中重新阐释和创新开掘的问题，都要经历一个现代的转变。任何文化遗产或资源并不能天然地成为产品，只有经过一定形式的再创造，才能成为具有丰厚知识产权的文化旅游产品。

要在原有文化资源的基础上，通过文化创意，对文化资源进行再创造、再包装，用现代的、科技的、创新的形式表现出来，从而形成新的文化形态和文化资源，有效拉伸和延长产业链条。

发展文化旅游的新业态，在产品开发上以科技导入、文化创意、产业融合，打造新的文化旅游产品，以全新的视听效果，满足游客新、奇、特的旅游需求；在管理和服务上做到人性化、精细化、艺术化，让游客受到尊重、得到享受、获得满足。

#### 4.4 化解“文物”情结，强化活态呈现

要促进文化旅游由粗放经营向内涵发展转变，着力提升旅游项目的文化内涵、科技含量、艺术品位、生态质量，创造高品格、个性化的文化旅游精品，形成有规模效益和发展潜力的特色文化品牌，提升旅游的品位和知名度、影响力，提升文化旅游业的核心竞争力。

要创新艺术表现形式，活化文化内容，把无形的文化形象化、高雅的文化通俗化、精英的文化大众化，开发具有知识性、参与性、体验性、娱乐性的旅游产品，让沉寂的历史活起来，使静态的景区动起来。

文物保护中要避免静态僵化，不能把遗产变成遗物。要通过丰富的文化活动，对遗产的活态再现，赋予新的生命力，使之成为“活的文化遗产”，打造一种文化气质和文化精神，使之成为独具特色的活态文化空间。

### 致谢

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# Study on Transformation and Upgrading of Chinese Rural Tourism

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**Keywords:** Rural tourism; Transformation upgrade; Development priorities; Product development

**Abstract.** With mass tourism era, Tourism market rigid demand and strong policy support, The Chinese rural tourism development ushered in a historic opportunity, but also facing the objective requirements of the transformation and upgrading. Rural tourism is a new form of industry, closely linked agriculture, agro-industry and services, Integration of ecology, production and living multiple functions. By analyzing the background and status of development of rural tourism, predict future trends in the development of rural tourism. Rural tourism industry must expand the existing space and the field, around the "rural areas, agriculture, farmers" and "ecology, production, life" issue, Achieve all-round, multi-level development.

## 中国乡村旅游转型升级研究

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**关键词:** 乡村旅游; 转型升级; 发展重点; 产品开发

**中文摘要.** 随着大众化旅游时代的到来，旅游市场的刚性需求和政策的大力扶持，使中国乡村旅游迎来了历史性发展机遇，但也面临着转型升级的客观要求。乡村旅游是紧密联接农业、农产品加工业和服务业的新型产业形态，融合生态、生产和生活多重功能。通过分析乡村旅游的发展背景和发展现状，预判乡村旅游的未来发展趋势。乡村旅游必须拓展原有的产业空间和领域，围绕“农村、农业、农民”和“生态、生产、生活”做文章，实现全方位、多层次开发。

### 1. 引言

乡村旅游是指以具有乡村性的自然和人文客体为旅游吸引物，以农村区域的自然环境、田园景观、乡村建筑、农业生产、农业设施、农业产品、农耕文化、农家生活、风情风貌为依托，吸引城市游客到乡村休闲度假、观光游览、科普教育、娱乐健身的新业态。

乡村旅游把农村、农业、农民与旅游业结合在一起，利用农村空间和农业景观吸引游客前来观赏、游览、品尝、休闲、体验、购物。从旅游者的角度看，到乡村去了解乡村民情、

礼仪风俗，学习、体验乡村生活的旅游活动，称为乡村旅游；从生产者的角度看，利用农村和农业资源条件，发展观光、休闲旅游是一种新型生产经营形态，称为休闲农业。

随着大众化旅游时代的到来，旅游市场的刚性需求和政策性的大力扶持，使中国乡村旅游迎来了历史性发展机遇。在新的形势下，传统的乡村旅游也面临着转型升级的客观要求。

## **2. 乡村旅游快速发展的客观背景**

### **2.1 经济社会发展和生活水平的提高**

休闲消费水平与消费者的收入水平、时间分配、生活方式、消费观念等因素有关。一般来说，收入水平和闲暇时间越多，休闲消费水平也越高。而生活方式、消费观念伴随着社会进步、经济发展和开放程度的变化而变化。同时，随着城市化水平的提高，使越来越多的农村人变成了城市人。

### **2.2 城市压力和休闲需求的增加**

随着城市化进程加快，城市人口急剧增加，为了缓解都市生活压力，人们渴望到农村享受暂时的休闲和宁静，体验乡村生活。休闲是一种生活状态，即人们在非工作时间内以各种“玩”的方式求得身心的调节与放松的一种业余生活。一般意义上的休闲是指两个方面：一是解除体力上的疲劳；二是获得精神上的慰藉。目前，发达国家公民大约三分之一的的时间用于休闲，三分之一的收入用于休闲，三分之一的人员就业在休闲，三分之一的GDP由休闲创造。

### **2.3 农业生产方式的改变和农业功能的拓展**

随着时代的发展，农业的内涵在丰富，空间在拓宽，效用在延伸，功能在拓展。农业不仅具有食品保障功能，而且具有原料供给、就业增收、生态保护、观光休闲、文化传承等功能。2015中央一号文件进一步指出：推进农村一二三产业融合发展。增加农民收入，必须延长农业产业链、提高农业附加值。积极开发农业多种功能，挖掘乡村生态休闲、旅游观光、文化教育价值。

### **2.4 农村拥有丰富的旅游资源禀赋和文化要素**

农村旅游资源是指能吸引旅游者前来进行旅游活动，为旅游业所利用，并能产生经济、社会、生态等综合效益的乡村景观客体，是由自然环境、物质和非物质要素共同组成的和谐的农村地域复合体。农村旅游资源禀赋包括自然景观资源、农业生产资源、农业科技资源、农业文化资源等；文化要素包括耕作文化、牧业文化、饮食文化、民俗文化、民间文艺、农产品文化、生活器具文化、遗址文化、自然环境文化等。

## **3. 中国乡村旅游发展状况与发展趋势**

### **3.1 中国乡村旅游发展状况**

中国内地乡村旅游兴起于改革开放以后，开始是以观光为主的参观性旅游。20世纪90年代以后，开始发展观光与休闲相结合的乡村旅游。当前，中国乡村旅游正在从观光旅游向观光、休闲、度假旅游融合阶段发展。在这个发展阶段，将迎来大量资本市场的资金进入乡村旅游市场，乡村旅游目的地的基础设施建设水准进一步提升，乡村旅游品质的特色更加突出，乡村旅游产品将融入更多的文化元素。

2015年8月4日，国务院办公厅《关于进一步促进旅游投资和消费的若干意见》指出，立足当地资源特色和生态环境优势，突出乡村生活生产生态特点，深入挖掘乡村文化内涵，开发建设形式多样、特色鲜明、个性突出的乡村旅游产品，举办具有地方特色的节庆活动。注

重保护民族村落、古村古镇，建设一批具有历史、地域、民族特点的特色景观旅游村镇，让游客看得见山水、记得住乡愁、留得住乡情。

### 3.2 中国乡村旅游发展趋势

乡村旅游的发展也逐渐呈现出产业规模化和产品多样化趋势。当前，乡村旅游发展正在经历六个方面重大转变：

在发展上，从农民自发发展，向各级政府规划引导转变；从休闲功能上看，从简单的“吃农家饭、住农家院、摘农家果”，向回归自然、认识农牧业、怡情生活等方向转变；从旅游产品上看，从初期的“农家乐”不断向农业观光旅游、蔬果采摘旅游、农耕体验旅游、乡村健身养生旅游发展；从空间布局上看，从最初的景区周边和个别城市郊区，向更多的适宜发展区域转变；从经营规模上看，由一家一户一园分散状态，向园区和集群发展转变；从经营主体上看，从以农牧户经营为主，向农牧民合作组织经营、社会资本共同投资经营发展转变。

### 3.3 中国乡村旅游发展理念和思路创新

中国乡村旅游的转型升级，必须紧跟时代步伐，创新发展理念，拓展发展思路。

一是以产业细分和产业融合为基础，树立大产业观念，即广义的休闲和大农业概念。

二是把农业多元功能开发与新型城镇化建设、新农村建设紧密结合，纳入总体规划。

三是以市场需求为导向，以区域特色农业资源为依托，实现资源和市场的有机结合。

四是以体验为核心，以回归自然、绿色生态为根本，打造核心竞争力。

五是以创意为灵魂，以科技为动力，实施双轮驱动。

## 4. 乡村旅游发展的重点内容

乡村旅游是横跨农村一、二、三产业，融合生产、生活和生态功能，紧密联接农业、农产品加工业和服务业的新型产业形态，涉及的产业、资源和参与主体包括农业、农村、农民。因此，乡村旅游的转型升级，必须拓展原有的空间领域和产业范畴，围绕“三农三生”做文章，实现全方位、多层次开发。

### 4.1 农村——农业——农民

#### 4.1.1 农村是乡村旅游发展的载体

乡村风貌作为旅游的本底，要用景观的概念建设农村，用旅游的理念经营农业，用人才的理念培育农民，将乡村装点成旅游度假腹地，实现农村景区化。将乡村民居与本地资源及文化特色相结合，开发观光体验产品，走产业型、环保型、生态型、文化型、现代型发展之路。

#### 4.1.2 农业是乡村旅游发展的产业依托

城市居民休闲需求，形成了乡村旅游的核心结构，拓展了农业的发展空间和功能，促进了观光农业、生态农业、精品农业的发展，带动了观赏经济作物种植、蔬菜瓜果消费、家禽家畜消费、餐饮住宿接待、民俗文化消费的全面发展，把农村的生产、生活资料转换成具有观光、体验、休闲价值的旅游产品。

#### 4.1.3 农民参与是乡村旅游的根

乡村旅游的发展可以使农民从事旅游业，农民的身份可以从务农转变成农商并举，开展观光采摘、农家乐、农家院、民俗村、生态美食、垂钓鲜食等，农户可以独立经营，也可以形成私营企业。



## 4.2 生态——生产——生活

### 4.2.1 生态包括自然生态和文化生态

生态文化是人类的文化积淀—是由特定的民族或地区的生活方式、生产方式、宗教信仰、风俗习惯、伦理道德等文化因素构成的具有独立特征的结构和功能的文化体系，是代代沿袭传承下来的针对生态资源进行合理摄取、利用和保护，以致能够人与自然和谐相处，可持续发展的知识和经验等文化积淀。从这个意义上说，生态文化就是从人统治自然的文化过渡到人与自然和谐的文化。乡村人文生态和自然生态以及二者之间交相作用形成的生态关系，构成乡村生态文化的主体。

乡村生态的首要基础在于乡村自然生态，包括乡土社会所有的自然物质构成，如自然环境以及形成生物链条的动植物种群。绿水青山是评判一个乡村生态环境好坏的重要指标，良好的生态环境直接关系到人类自身的健康。在城市化进程不断加剧的今天，美丽乡村建设以其优美的自然环境、清新的空气和优良的生态环境，成为城市的后花园，并为都市人回归自然、享受人与自然和谐提供了最佳场所

乡村人文生态则涵概了乡村社会生活场所、习俗信仰与艺术追求等精神文化样式。各地区各民族自然形成的、原生性的、祖先传下来的文化生活，就体现在日常生活中。文化生态具有不可再生性，许多历史文化遗产一旦毁损，传统风格一旦变异，人居环境一旦破坏，将是人类文明的损失。

### 4.2.2 生产包括传统农业和现代农业

传统农业是在自然经济条件下，采用人力、畜力、手工工具、铁器等为主的手工劳动方式，靠世代积累下来的传统经验精耕细作，以自给自足的自然经济居主导地位的农业，具有古老性和原生态特征。

现代农业是指应用现代科学技术、现代工业提供的生产资料和科学管理方法的社会化农业。现代农业的本质内涵可概括为，是用现代工业装备的、用现代科学技术武装的、用现代组织管理方法经营的社会化、商品化农业，具有规模化、规范化、精细化、产业化等特征。

### 4.2.3 生活包括农村生活和农民生活

生活是农村居民的系统化、模式化生活活动的典型形式与总体特征。农村生活方式是一个内容广泛的概念，广义的农村生活方式指农村居民的全部生活活动方式，包括劳动生活方式、消费生活方式、闲暇生活方式、政治生活方式等；狭义的生活方式专指消费、闲暇生活方式。各地农村居民长期从事以农业为主的生产活动，形成了独特的生活方式。

## 5. 乡村旅游产品开发

产品是乡村旅游的载体，是对游客形成吸引力的关键。打造成功的产品，是发展乡村旅游的重中之重。当今人们的休闲旅游需求日趋多元化，已不满足于单一的农家乐、观光、采摘等模式。体验是乡村旅游发展的核心，必须从游客体验出发，促进农业向深度和广度方向发展，丰富乡村旅游与休闲农业产品的内容，为消费者提供独具特色的高品味、多层次、全方位的休闲体验。

### 5.1 乡村旅游产品开发的原则

一是主题要鲜明。主题是项目的灵魂，包括项目名称、功能、风格、产品体系等。

二是特色要突出。特色是乡村旅游发展的生命之所在，特色越突出其竞争力和发展潜力就会越强。

三是规划要先行。规划包括区域发展规划、土地利用控制性规划、项目修建性详规。

四是内容要创新。围绕“高、新、特、优、雅、奇”进行开发。

五是内涵要有文化。有深厚的文化底蕴，项目内容才更丰富多彩、更有吸引力。

六产品要创品牌。品牌是形象，是无形资产，是竞争力。

## 5.2 乡村旅游发展的三个创新维度

一是提升高度，突出特色化、精致化。乡村旅游不等于粗制滥造、低档次、低价格。要走精致化道路，在项目设计、规划建设、空间布局、餐饮、环境等方面做细活。

二是挖掘深度，挖掘乡土文化、民族文化。乡村旅游的核心不是走马观花，而是休闲度假，要把人留下来，必须深入挖掘地域文化、民族文化、乡土文化。

三是拓展广度，打造产业链，提高附加值。乡村旅游要拓展开发视野，创新旅游业态，丰富产品种类，增加消费卖点。

## 致谢

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## Simulation of Marine Air Compressor Based on Matlab/Simulink

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**Keywords:** Air compressor; Modeling; Simulation.

**Abstract.** Air compressor plays an important role in the safety operation of the ship machinery equipment. The mathematical modeling of HV2/300A type air compressor is established in this paper, and combined the actual measurement with the simulation results by using Matlab / Simulink simulation. The article has important significance to the crew of the related technical training and equipment research or development.

## 基于Matlab/Simulink的船用空压机仿真

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**关键词:** 空压机; 建模; 仿真

**中文摘要.** 空气压缩机在船舶机械设备正常运营过程中起着重要的作用, 文章通过对HV2/300A型空压机进行数学建模, 以及利用Matlab/Simulink进行仿真, 并结合实际测量对比仿真效果, 对船员的相关技术培训和设备研发具有重要的意义。

### 1. 引言

基于船舶机械系统的仿真技术能够利用热力学、流体力学等动力学学科理论将研究设备或系统的工作过程或流程进行阶段划分、建立相对应的数学模型或实物模型, 并通过近似于船机设备工作环境的模拟进行相关操作和试验, 最后结合实际情况进行评估与对比, 最终能达到估计或预测仿真对象的实际性能或趋势, 这样不但可以降低相关操作人员的误操作危险性, 同时为培训机构或科研研发人员节省了大量的物力、人力支出, 提高了整个过程的经济性, 系统可操作性和重复性强等有点, 因此, 船舶机械系统的仿真技术已经广泛应用各海事培训院校和结构、科研与开发以及船机设备故障诊断技术等领域。

船舶在正常营运过程中, 无论是主推进动力装置还是发电柴油机副机以及其他辅助设备的起动、运行和维护等都离不开压缩空气, 而空气压缩机是目前船舶上最常见的提供压缩空气的最主要设备和核心, 同时也是SOLAS等国际法规中强制要求必备的设备之一[1][2]。因此, 加强船员对空气压缩机的熟知与操作非常好有必要。本文通过对船用空压机进行建立相关数

学模型，并运用Matlab/Simulink建立仿真模型等，对船员的相关技术培训和设备研发具有重要的意义。

## 2. 船用空压机工作原理及数学模型

本文主要首先选定空气压缩机的型号，根据其工作性能曲线选取相关工况下的参数等方法建立其数学模型。对象型号为SPERRE牌的HV2/300A型固定式活塞空压机，主要技术参数有功率为71.3kw、排气量为396m<sup>3</sup>/h、排气压力为3.0MPa、冷却水流量74L/min，转速为875rpm。

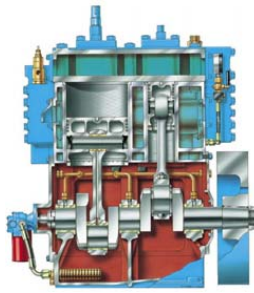


图1 HV2/300A空压机机结构图

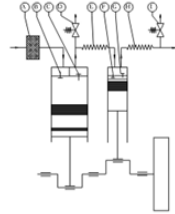


图2 HV2/300A空压机工作原理图  
A 吸气滤清器 B 低压吸气阀 C 低压排气阀  
D 低压安全阀 E 低压冷却器 F 高压吸气阀  
G 高压排气阀 H 高压冷却器 I 高压安全阀

如图1中HV2/300A空压机机结构图可见，该机型传动机构通过气缸、活塞、和曲柄-连杆等机构构成，电动机通过联轴节带动其曲轴旋转，并通过连杆将曲轴的回转变成活塞的往复运动，从而使得活塞对空气进行压缩。

### 2.1 排气温度模型

HV2/300A型空压机为二级压缩，可以将其压缩过程分为一级和二级压缩,其一级和二级压缩缸排口温度分别为：

$$T_1 = T_0 \left( \frac{P_1}{P_0} \right)^{(m_1-1)/m_1} \quad (1)$$

$$T_2 = T_1 \left( \frac{P_2}{P_1} \right)^{(m_2-1)/m_2} \quad (2)$$

式中， $T_0$ —周围空气温度，单位：K； $P_0$ —周围空气压力，单位：MPa；

$P_1$ —一级压缩排压，可取 $\sqrt{3P_0}$ ，单位：MPa； $m_1$ —一级压缩空气多变指数；

$P_2$ —二级压缩排压，单位：MPa； $m_2$ —二级压缩空气多变指数；

### 2.2 排气流量模型

2.2.1 根据相关理论<sup>[3]</sup>，理想情况下，HV2/300A型空压机的体积流量方程为：

$$V_t = \pi D^2 S z n / 240 \quad (3)$$

式中， $V_t$ —体积流量，m<sup>3</sup>/s； $D$ —一级气缸内径，m；

$S$ —活塞的行程，m； $z$ —气缸的数量； $n$ —转速，rpm。

2.2.2 对于压缩空气的质量流量可由下式计算：

$$q_m = \rho V_s = \lambda_\varphi \lambda \rho \pi D^2 S z n / 240 \quad (4)$$

式中， $q_m$ —空压机实际质量流量，kg/s； $\lambda_\varphi$ —压缩机二级析水修正系数；

$\lambda$ —空压机输气修正系数； $\rho$ —空气密度，kg/m<sup>3</sup>。

### 2.3 换热器模型

HV2/300A型空压机是通过冷却水循环冷却，由于其冷却系统环节包括压缩整个过程中，要准确计算其导热模型会很复杂，考虑现实情况可以适当简化为循环热交换中换热器所交换总热量 内部压缩空气放出总热 内部冷却水吸收总热。

根据传热学热量传导过程可得：

$$Q_w = m_w C_w (t_{wo} - t_{wi}) \quad (5)$$

$$Q_g = m_g C_g (t_{gi} - t_{go}) \quad (6)$$

$$Q_e = k \cdot A \cdot \Delta T_m \quad (7)$$

式中， $Q_w$ —内部冷却水吸收总热，kJ； $Q_g$ —内部压缩空气放出总热，kJ；  
 $Q_e$ —换热器所交换总热，kJ； $t_{wi}$ —冷却水在冷却器入口温度， $^{\circ}\text{C}$ ；  
 $t_{wo}$ —冷却水在冷却器出口温度， $^{\circ}\text{C}$ ； $m_w$ —内部水流量，kg/s；  
 $t_{gi}$ —压缩空气在冷却器入口温度， $^{\circ}\text{C}$ ； $t_{go}$ —压缩空气在冷却器出口温度， $^{\circ}\text{C}$ ；  
 $m_g$ —内部压缩空气流量，kg/s； $c_w$ —水的比热，kJ/kg·K；  
 $c_g$ —空气的比热，kJ/kg·K； $A$ —冷却器的换热面积，m<sup>2</sup>；  
 $\Delta T_m$ —冷却器的平均温差， $^{\circ}\text{C}$ 。

利用热交换器中质量与能量守恒定律可对上述式5、6、7进行求解可得：

$$\begin{aligned} t_{go} = & (2 \cdot C_g \cdot C_w \cdot m_g \cdot m_w \cdot t_{gi} + A \cdot k \cdot C_g \cdot m_g \cdot t_{gi} - A \cdot k \cdot C_w \cdot m_w \cdot t_{wi} + 2 \cdot A \cdot k \cdot C_w \cdot m_w \cdot t_{wi}) / \\ & (2 \cdot C_g \cdot C_w \cdot m_g \cdot m_w + A \cdot k \cdot C_g \cdot m_g + k \cdot C_w \cdot m_w) \end{aligned} \quad (8)$$

### 3. 模型仿真与计算分析

Matlab软件具有很强大的功能，不但包括高效的编程、扩充能力以及运算能力等，而且可以方便操作使用信号处理、神经网络以及Simulink等特殊运用，因此，它在科研界的数据计算与处理中占有重要地位。Matlab/Simulink仿真组件不需要繁杂的程序编写就能建立各种复杂系统仿真框图。

结合上述空压机的模型，通过Matlab/Simulink仿真组件得到其仿真模型，如图3所示。

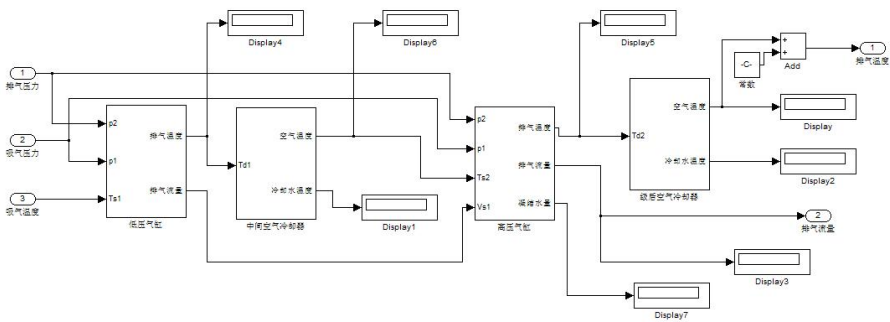


图3 空压机仿真模型

此时经过测定HV2/300A型空压机的相关技术参数为：所处机舱工作温度为37 $^{\circ}\text{C}$ 、大气压力为0.1MPa、转速为875r/min、排压为3MPa，冷却水的流量和温度分别为74L/min、30 $^{\circ}\text{C}$ 。经过仿真计算和空压机实际情况测量结果见表1，其中排气流量与排气温度的仿真结果与实际测量的相对误差分别为4.77%和4.37%，仿真效果良好。

表1 仿真结果与实际值比较

	实际值	仿真计算值	相对误差
排气流量	396m <sup>3</sup> /h	377.1m <sup>3</sup> /h	4.77%
排气温度	49℃	46.86℃	4.37%

#### 4. 结束语

通过对船用HV2/300A型空气压缩机进行建模、仿真，并通过实际测量对仿真结果进行对比验证，效果良好，但是仍然存在一定误差，这主要是空压机实际运行周围环境温度和湿度等综合因素存在不确定性，以及在对其数学建模过程中进行了简化导致测量与仿真结果产生一定偏差。因此，在以后的研究中还要不断完善和修正相关数学模型以减小相对误差量。

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## An Analysis of Inward Performance Index about Linyi City's FDI Utilization

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**Keywords:** Linyi city; FDI Utilization; Inward FDI performance Index

**Abstract.** Because of reform and opening, China has become a hot spot for international investment. The foreign direct investment has become one of the main factors of the high speed growth of China's regional economy. Linyi city, as the largest and most populous city in Shangdong province, has made great achievement in attracting foreign investment to promote economic development in recent years, but relative to the coastal city of Shandong province, Linyi city's scale and quality of using foreign capital is still relatively lagging behind. Through analyzing the present situation of the utilization of foreign capital, Inward FDI performance Index and existing problems, the article will further put forward some countermeasures and suggestions to make better use of foreign capital for Linyi city.

## 临沂市利用FDI的业绩指数分析研究

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**关键词:** 临沂市;利用外资;FDI业绩指数

**中文摘要.** 改革开放以来, 中国已经成为国际投资的热点, 外商直接投资已经成为我国区域经济高速增长的主要因素之一。临沂市作为山东省面积最大、人口最多的地级市, 近年来在吸引外资推动经济发展方面取得了前所未有的成绩, 但相对于山东省沿海城市, 临沂市利用外资规模和质量水平仍然相对滞后。从规模、来源国分布等方面分析了临沂市利用外资的现状, 通过与省内其它城市的业绩指数对比分析了临沂市利用外资存在的问题, 并提出了相关建议。

## 1. 引言

改革开放以来，中国正逐渐与世界金融体系接轨，外商直接投资(FDI)已经成为支持我国经济增长的一个重要因素。临沂市吸引外资形势良好，利用 FDI 规模不断增长。FDI 在促进临沂市经济增长、补充当地资本缺口、增加居民就业与收入等方面，做出了重要的贡献。但是，与山东省其他城市尤其是青岛、威海、日照等相比，临沂市利用外资水平明显低下，因此有必要对临沂市利用外资现状加以分析研究，进一步提出更好地利用外资的对策和建议。

## 2. 临沂市利用外资现状

### 2.1 临沂市利用外资的规模

2015年临沂市利用外资稳定发展，全市新批利用外资项目21个，合同利用外资2.33亿美元，实际利用外资4.01亿美元，同比增长17.9%。但2007年到2015年临沂市利用外资规模总体却是呈下降趋势（见表1）。

表1 2007-2015年临沂市实际利用外资金额情况（单位：亿美元）

年份	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年
金额	4.3	3.03	3.05	3.27	2.69	2.4	3.1	3.4	4.01
增长	26.9%	-29.5%	0.7%	7%	-17.7%	-12.5%	31.2%	10.2%	17.9%

数据来源：各年份《临沂市国民经济和社会发展统计公报》、《临沂统计年鉴》

由表1可以看出，2007年临沂市利用外资水平较高，而2008年受美国金融危机的主要影响，临沂市利用外资总量大幅下降，虽然在2009年后有所回升，但升中有降且增幅有限，到2013年实际利用外资总量出现强势增长，2014年和2015年继续增长，但仍未回到2007年的水平。

### 2.2 临沂市利用外资的国别构成

临沂市利用外资国别构成呈现多元化，但仍然相对集中。临沂市外资来源于100多个国家和地区，从实际利用外资金额上，具有非常明显的集中在亚洲的特点，而在亚洲又主要集中在香港、新加坡、日本、韩国等几个国家或地区。其中，香港是临沂最大外资来源地。从2009年到2013年，临沂市连续五年参加香港山东周活动，共签约50个项目（不包括协议），签约合同外资金额共33.88亿美元。目前临沂市存续港资企业占全市外资企业总量的1/3，约为170多家，实际利用港资7.55亿美元，其中在2011年港资占全市外资总额的比重曾高达49%。

### 2.3 临沂市利用外资的产业构成

临沂市利用外资产业构成相对集中，主要投向了第二产业，第三产业次之，第一产业的比重很小，分别占临沂市实际利用外资的62.9%、34.7%、2.4%。在第二产业中又主要集中在传统制造业，如建材、服装、食品、化工、机械、电子、医药等行业，采掘业和电力、煤气及水的生产供应业的投资比重很低。投向第三产业的外资主要集中在房地产业、批发和零售业、住宿和餐饮业以及交通运输、仓储和邮电通信业。2013年以来临沂市注重投资领域和行业政策引导，积极支持国（境）外企业投资新能源、新材料、新兴医药、电子信息等支柱性产业的项目，支持外商通过以拥有知识产权的先进技术作价出资等方式进入新能源、新材料、信息网络、生物育种、新能源汽车等战略性新兴产业，鼓励外商投资金融保险、现代物流、服务外包等生产性服务业的项目以及社区服务、信息咨询等生活性服务业的项目，鼓励跨国公司同国内研发机构和企业开展研发合作，逐渐实现利用外资结构优化。



## 2.4 临沂市利用外资的方式

利用FDI主要有中外合资经营企业、中外合作经营企业、外商独资经营企业和外商投资股份制企业四种形式。近年来，推动企业境外上市融资是临沂市利用外资的主要方式。如，2012年12月临沂兴盛矿业集团下属中盛资源控股有限公司在香港联交所创业板挂牌上市，目前临沂市已有21家企业境外上市，融资近15亿美元，累计调回资金9亿美元，返程投资率达60%。2015年，临沂市为提高利用外资溢出效应，创新机制推进“三引一促”，引导外资企业股权并购、股权转让增资扩股，如山东常林道依茨法尔机械有限公司向外方转让股权，一次性到位外资4740万美元；韩国希杰集团25亿元购买荣庆物流股权项目获批等，这是临沂市在中韩自贸协定签署机遇下与韩国著名跨国公司签订的首个投资过亿美元外资项目，也是临沂市一次性利用外资最大的项目。

## 3. 临沂市利用外资的业绩指数的对比分析

### 3.1 业绩指数的含义

自2002年起，联合国贸易和发展会议（简称UNCTAD）在其每年发布的《世界投资报告》中采用外商直接投资流入业绩指数（Inward FDI Performance Index）和外商直接投资流入潜力指数（Inward FDI Potential Index）两项指标，描述和评价各国吸引FDI的现实状况及前景，并通过指数大小的排序来客观反映某一国家或地区上述业绩潜能在全世界的名次和地位。参照UNCTAD报告的计算方法，我们可以规定一个地市利用外资业绩指数，是指在一定时期内，该地市FDI流入量占全省FDI流入量的比例比上该地市GDP占全省GDP总量的比例，其数学表达式为：

$$IND_i = (FDI_i / FDI_t) / (GDP_i / GDP_t)$$

其中， $IND_i$ 为第*i*个地市利用FDI业绩指数； $FDI_i$ 为第*i*个地市FDI流入量； $FDI_t$ 为全省FDI流入量； $GDP_i$ 为第*i*个地市的GDP； $GDP_t$ 为全省GDP总量。如果某个地市的业绩指数大于1，则表明该地市吸收了相对其经济规模而言更多的FDI，即业绩突出；反之，如果业绩指数小于1，则表明其吸收的FDI低于在其经济规模下应达到的数量，即业绩不佳；如果业绩指数等于1，则表明该地市吸收了与其经济规模相当的FDI，即业绩正常。

### 3.2 临沂市利用外资业绩指数的横向比较分析

本次研究测算了2011-2015年山东省17个地市利用FDI的业绩指数，将临沂市利用FDI业绩情况与省内其它城市进行横向比较分析。

由表2可以看出，2011-2015年山东省17个地市间利用外资水平不平衡，青岛、威海、日照三个沿海城市利用外资业绩突出，基本保持在前三位。其中，青岛利用外资业绩最为突出，FDI业绩指数连续五年均保持在2以上。其次，烟台、济南、济宁、滨州的业绩指数也比较高，而聊城、东营、枣庄三市利用外资情况较差。临沂市FDI业绩指数连续五年都低于1，甚至不足0.5，这说明临沂市利用外资水平远没有达到与当地经济规模相当的程度。2011-2015年临沂市GDP总量分别为2770.45亿元、3012.8亿元、3336.8亿元、3569.8亿元、3763.2亿元，在全省连续五年位居第7，然而利用外资水平在全省分别位居第11、第14、第13、第12、第12，只处于中等偏下水平，这表明临沂市吸引外资的业绩不佳，竞争力量明显不足。

表2 2011-2015年山东省17市利用FDI总量、FDI业绩指数及排名

地区	FDI 总量(亿美元)					FDI 业绩指数					业绩指数排名				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
济南	11	12.2	13.2	14.3	15.8	1.01	1.03	0.98	0.97	1.00	7	6	5	5	5
青岛	36.3	46	55.2	60.8	66.9	2.23	2.55	2.68	2.74	2.78	2	1	1	1	1

淄博	4.6	5	5.3	5.4	5.9	0.64	0.6	0.54	0.52	0.55	10	10	10	10	11
枣庄	1.2	1.42	1.59	1.05	1.0	0.31	0.34	0.34	0.21	0.19	13	13	14	16	15
东营	1.4	1.62	1.93	2.15	2.22	0.21	0.22	0.23	0.25	0.25	15	16	17	14	14
烟台	13.4	14.1	16.1	17.7	19.2	1.11	1.08	1.11	1.15	1.15	5	5	4	4	4
潍坊	7.2	7.7	8.1	8.98	10	0.83	0.78	0.71	0.73	0.75	8	8	8	7	8
济宁	7.3	7.7	8.3	8.86	9.16	1.03	0.98	0.92	0.91	0.88	6	7	6	6	6
泰安	1	1.7	3.07	4.13	4.96	0.18	0.27	0.43	0.54	0.61	16	15	11	9	10
威海	7.27	8	9.2	10.12	11.2	1.4	1.39	1.4	1.42	1.44	3	2	2	2	2
日照	3.8	4.21	5.3	5.73	5.78	1.27	1.26	1.37	1.39	1.34	4	3	3	3	3
莱芜	1	1.2	1.21	0.61	1.35	0.67	0.77	0.72	0.35	0.78	9	9	7	13	7
临沂	2.69	2.4	3.1	3.4	4.01	0.4	0.32	0.36	0.37	0.41	11	14	13	12	12
德州	1.9	2.11	2.15	1.57	1.19	0.4	0.38	0.32	0.24	0.17	11	11	15	15	16
聊城	0.8	1.15	1.63	1.06	0.57	0.17	0.22	0.27	0.16	0.08	17	16	16	17	17
滨州	10.4	5.41	3.04	3.83	4.1	2.34	1.1	0.55	0.66	0.67	1	4	9	8	9
菏泽	0.8	1.65	2.18	2.18	2.3	0.22	0.37	0.41	0.38	0.37	14	12	12	11	13

数据来源：根据山东省各年份各市统计公报、统计年鉴计算和整理

## 4. 临沂市利用外资存在的问题

### 4.1 利用外资规模不稳定，总体增长速度缓慢

由表1可以看到，2007-2015年临沂市实际利用外资总量不稳定，2007年实现同比增长26.9%，2008年同比下降29.5%，往后四年总量先升后降且升少降多，到2013年才又实现较大幅度的增长，2014年、2015年虽在增长但增幅不大。因此，总体来看临沂市利用外资规模不稳定，总体增长速度有待提高。

### 4.2 利用外资产别构成单一，高质量外资不多

临沂市的外商直接投资主要来自香港、新加坡、日本、韩国等亚洲国家和地区，这些国家和地区的技术创新力远不及欧美国家，因此对临沂的投资主要是传统的制造能力的转移，即使在一些高新技术产业领域，也只是一些技术含量低、附加值较少的加工组装环节的转移，因此引进的外资质量不高，以劳动密集型项目居多，科技含量少，对提高利用外资效率，促进本地区技术进步的作用相对有限。另外，大型跨国公司在临沂设立的技术研究中心少，临沂市本地企业难以吸收到先进技术和进行再创新，先进技术的受益程度有限。

### 4.3 利用外资产业构成不均衡

临沂市利用外资产业构成不均衡，主要集中在制造业和低端服务业。2013年临沂市第一产业实际利用外资占总数的0.46%，远低于其对临沂市国民经济的贡献率9.72%。第三产业实际利用外资只占总数的25.8%，与其对临沂市国民生产总值42.81%的贡献率显然也不相符。而制造业利用外资比重偏高，约占总数的73.74%。当前临沂市在利用外资方面存在产业分布不均衡的问题，利用外资的领域有待进一步扩大，投向服务业和农业领域的外资比重有待进一步提高。

### 4.4 外资投向地区分布不均衡

临沂市辖兰山、罗庄、河东3个区，郯城、兰陵、沂水、沂南、平邑、费县、蒙阴、莒南、临沭9个县和高新区、经济区、临港区3个开发区。临沂市各地区经济发展很不平衡（见表3），2015年，兰山区、罗庄区、经济区和高新区的人均生产总值明显高于全市人均生产总值，分别为61823元、59194元、94586元、50826元，其他地区均低于全市人均生产总值，而沂南最低。总体来说，临沂市东部各县和中部三区发展较快，西部发展比较滞后，差别很

大。地区经济发展失衡导致临沂市各地区在吸引外资的竞争力方面存在较大差异。2015年全市实际利用外资14230万美元，全市只有河东区、沂南县、沂水县、临沭县、经济区5个县区直接利用外资超过千万美元，6个县区直接利用外资为零（见表3）。因此临沂市的外资投向地区分布有待进一步优化。

表3 2015年临沂市区县人均GDP、实际利用外资情况

县 区	人均生产总值(元)	实际利用外资(万美元)	比上年增长(%)	县 区	人均生产总值(元)	实际利用外资(万美元)	比上年增长(%)
合计	36656	14230	-58.2	费 县	33363	67	-6.9
兰山区	61823	229	-97.2	平邑县	28965	0	-100.0
罗庄区	59194	367	-63.4	莒南县	33199	0	-100.0
河东区	33840	2466	149.6	蒙阴县	34172	0	-100.0
沂南县	27837	1923	90.0	临沭县	35106	5743	-34.7
郯城县	29920	139	231.0	高新区	50820	0	-100.0
沂水县	34381	2187	5.9	经济区	94586	1109	-63.0
兰陵县	28542	0	-100.0	临港区	30509	0	-100.0

数据来源：2016年《临沂统计年鉴》

## 5. 提高临沂市利用外资水平的对策与建议

### 5.1 优化外资来源国别，提升引进外资质量

临沂利用外资的来源主要是港新日韩等亚洲国家和地区，其中，香港是临沂最大外资来源地，临沂市应在确保和巩固港新日韩等亚洲国家和地区投资的基础上，重点争取欧美等发达国家对临沂市的投资，稳步提升利用外资的规模和质量。

首先，巩固港新日韩投资成果，确保引进外资质量。完善吸引外国大型跨国公司投资的机制，继续并加强重视以上主要外资来源国的投资动向，建立专门大型跨国公司研究机构，建立香港、新加坡、日本、韩国等国家和地区的大型跨国公司信息数据库，密切关注其投资动向，并根据临沂市发展规划和需要，建立适合以上国家和地区的大型跨国公司投资的项目库。着重促成科技含量高、拉动能力强新兴产业项目的引资。

其次，重点突出对欧美招商，成为引进外资新的增长点。重点引进欧美发达国家的先进技术和管理经验，产业重点应锁定化工医药、纺织服装、交通运输设备、电子家电和食品五大产业及相关产业链，特别是针对欧美产业结构特点，还要加强对高科技、装备制造业以及服务领域的招商引资力度。

### 5.2 扩大利用外资领域，优化利用外资结构

首先，扩大现代农业、高等教育、公共卫生和社会保障、环境和公共基础设施、金融保险、房地产、餐饮、体育与娱乐、居民服务等服务行业的开放程度，使之成为引进外资新的增长点。

其次，加速引导外资投向现代农业、农产品加工业、科学研究、技术服务业、高新技术产业等领域，引导跨国公司在临沂设立技术研发中心，形成具有较强竞争力的现代技术产业基地，发挥产业集群的外资技术溢出效应。推行有利于促进产业结构优化升级的优惠差别化政策，创造内外资平等竞争的市场环境，真正落实以市场换技术的方针，大力引进新兴产业的资本和技术，保证为区域产业结构的进一步调整和优化积累资金、人才、技术和经验，培养后发优势。

### 5.3 协调利用外资的区域平衡，创造区域内平等利用外资环境

临沂市目前利用外资区域呈现集中性和不平衡性，主要集中在东部和中部的经济发展水平较高的区县和开发区。为了解决东西部发展失衡问题，需要以外资促发展，以发展引外资。

首先，以外资促发展，是指通过强化西部县区利用外资能力带动地区经济发展水平的提高。对此，需要发挥西部县区的比较优势，即劳动力、自然资源和生态环境方面的优势，重点加大现代农业、旅游业的引资力度，提高外资的资源配置效率，以带动当地经济快速发展。

其次，以发展引外资，这就需要临沂西部县区政府加强本区域经济建设，为吸引外商投资创造良好的环境，重点搞好基础设施建设，如交通、水利、电力等基础设施的建设，为外商投资提供更多的发展空间和商业机会，而且结合本地区发展需要，确定本地重点发展的行业和部门，实行行业差别的优惠利率等政策，推动重点发展行业利用外资水平的提升。

#### 5.4 加快开发区建设，充分发挥其示范带动作用

临沂现有临沂经济技术开发区、高新技术开发区2个国家级开发区和临港经济开发区1个省级开发区。和全国其他很多地方一样，临沂也把开发区作为招商引资的一个重要平台。但临沂开发区起步晚、3个开发区发展不平衡，一定程度限制了开发区对临沂引进外资的贡献度。2015年高新区、经济区、临港区实际利用外资分别为0万美元、1109万美元、0万美元，三个开发区实际利用外资仅占全市的7.8%，低于开发区所赋的承载能力，为此需加快开发区建设步伐，充分发挥开发区引进外资的载体作用，明确开发区的产业导向，强化产业的合理分工和布局，实现错位发展。鼓励开发区重点引进市场竞争能力强、与产业关联度高且带动力强、附加值高和技术含量高、能耗少与污染小的先进制造业，推动具有综合优势的特色产业发展，加快促进以特色产业为重点的配套产业链建设。

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## Based on the "Supply Side", the Study of Reforming Small and Micro Businesses Accounts Payable Management

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**Keywords:** "Supply side" reform; Small and micro businesses; Accounts payable management.

**Abstract.** The "supply side" is an economic development strategy of structural reform under the new normal condition. It is of vital importance for the small and micro corporation that can conduct their performances. Mainly based on this reform, these companies can have a scientific judged about the account payable management, adjust their views on it at the right moment, improve their company's competence and the development of the energy consistently and add the efficient market supply. Under the condition of the "supply side" reform, this passage has deeply analysed the existing problems and the causes of the small and micro businesses accounts payable management and give some advises.

## 基于“供给侧”改革小微企业应付账款管理的研究

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**关键词:** “供给侧”改革; 小微企业; 应付账款管理

**中文摘要.** “供给侧”改革是经济发展新常态下的结构性的战略改革，对于小微企业发展都具有一定的指导意义。小微企业要基于“供给侧”改革对应付账款管理进行科学研判，适时调整应付账款管理视角，不断增强发展活力和竞争力，增加市场有效供给。本文通过基于供给侧改革背景下，对目前小微企业应付账款管理存在的问题及成因进行了深入的分析，并从小微企业内外两方面提出相关建设性对策建议。

### 1. 引言

中共十八届五中全会审议通过的“十三五”规划建议明确指出：“创造新供给，推动新技术、新产业、新业态蓬勃发展，加快实现发展动力转换。”这说明“供给侧”结构性改革已成为我国当前适应和引领经济发展新常态的重要举措。小微企业在资产总额、从业人

员和年度应纳税所得额虽然“小型”和“微利”，但它是全面建成小康社会的生力军，在经济增长、扩大就业、促进创新、繁荣市场、社会稳定和满足人民群众多方面需求等方面发挥着不可替代的重要作用。随着大众创业、万众创新时代的到来，重视和规范应付账款管理是促进小微企业健康发展的重点和难点，需要从供给、生产端入手，通过解放小微企业生产力，尤其是淘汰落后产能，将发展方向锁定新兴领域、创新领域，创造新的经济增长点，不断转变对小微企业应付账款管理的观念，重新审视应付账款管理在小微企业健康发展中的地位和作用，使小微企业增强经营活力，提升竞争力，着力推进“供给侧”结构性改革。

## 2. 基于“供给侧”改革小微企业应付账款管理存在的问题

### 2.1 小微企业内部存在的问题

#### 2.1.1 不能准确研判应付账款

作为负债科目，应付账款属于流动负债，原则上是在一年之内就应该偿还的款项，虽能暂时解决资金短缺之急，但在实际交易中通常 2—3 个月偿还。对于到期支付的应付账款，认为延后付款的实质就等于增加了公司的流动资金，从而改善公司的资金状况，认为可以从中获利，根本不考虑企业的信用、负债结构和比例。当前，小微企业大多科技含量不高，效益低下，创新不足，产品供给面临严重的结构畸形，一方面社会需求紧缩的中低端产品生产严重过剩，另一方面社会急需的高端产品供给严重不足，有的依靠赊欠和举债勉强维持经营，有些甚至沦为失去创造价值能力的“僵尸企业”，归根到底就是小微企业精力放在如何盲目甚至故意拖欠应付账款上，而没有考虑如何从内生能力上来增强自身实力、活力，增加市场有效供给。

#### 2.1.2 制度缺失，违章舞弊

大多数小微企业都没有完善的应付账款管理的内部控制制度，很容易让会计人员趁机独吞企业的现金折扣、贪污货款等。如存在因质量问题而产生的销售退回时，很容易出现会计人员隐藏红字退货发票，不冲减供货方的应付账款，待结算款项时，从中贪污货款。不完善的内部控制，使管理人员缺乏责任感，如遇问题相互推脱，应付账款的管理工作漏洞百出。

小微企业有时利用“应付账款”账户隐匿企业的销售收入，将企业的销售收入借记“银行存款”，贷记“应付账款”，致使库存商品账实不符，并且应付账款长期挂账，逃避税款。有时利用“应付账款”科目转移企业资金，隐藏企业不合理的支出。根据税法规定：企业无法或无需支付的应付账款，应计入“营业外收入”，而有些企业则计入“应付账款”后长期挂账不处理，隐瞒收入，逃脱税款。

### 2.2 小微企业外部存在的问题

#### 2.2.1 没有和谐的供应商关系

小微企业不重视与供应商的关系，对应付账款进行管理简单地认作应付账款的支付和应付账单的核销，对供应商的档案没有详细的整理，也不注重同供应商增强联系。发票处理流程出现混乱，使得应付账款的及时性和准确性得不到准确的保障，多次拖欠货款，企业与供应商不能建立良好、和谐的关系，就会失去以后购货的优惠折扣，日后的采购工作将会增加很多成本。

#### 2.2.2 忽视社会信用体系建设

目前，小微企业本身存在信用不足、财务状况不真实、经营不稳定等，先天性不足，社会又缺乏针对小微企业行之有效的信用体系，有的社会信用体系侧重于信用信息共享、信用环境营造等工作，缺乏系统性，可持续性差，不能从源头上提升小微企业信用问题，造成有的小微企业一方面因应付账款超过正常负债能力而经营举步维艰，一方面经营者大肆挥霍、抽逃资金、恶意拖欠甚至“跑路”。

### 3. 基于“供给侧改革”小微企业应付账款成因分析

#### 3.1 客观原因形成的应付账款

##### 3.1.1 小微企业自身客观原因

小微企业法人治理结构不合理，规模小，自有资金是有限的，注册资金主要来源于自有资金，而且信息不对称，在市场竞争中处于下风，在融资中会面临金融机构大量的考察和多重环节的审批，无法以较低利率获得贷款来维持正常经营，导致还贷成本较高。同时受经济下行与“供给侧”改革影响，特别受人民币汇率变动、股市波动、货币政策调整、国际金融危机和缺乏差别化信贷政策等因素冲击，小微企业必须采用挂账采购，占用了供应商的资金来持续正常经营。

##### 3.1.2 时空客观原因

时空差异是指由小微企业在购买商品或接受劳务时，由于提供商品或劳务的企业在地域上不可能全部同居一城，货物（劳务）流转与单据流转并非完全同步进行，使得买卖双方很难完全做到“一手交钱，一手交货”，因此，获得商品，接受劳务与支付货款就会存在时间差，而时间差越长，自发原因形成的应付账款就会越多，严格来说，这部分应付账款不属于商业信用。

#### 3.2 主观原因形成的的应付账款

##### 3.2.1 小微企业自身主观原因

小微企业不仅在管理体系、人才配置和资本的多方面存在着短板，同时大多数小微企业负责人缺乏专业的管理技能，致使经营管理相对松散，缺乏长远规划和远期目标的制定，小微企业在经营过程中，乐于采用挂帐采购的方法，相应形成应付账款，虽能暂时缓解企业资金紧张的困境，但也有时很容易不考虑小微企业自身经营发展需求，过多、过滥采购，造成库存积压。有的人为了个人私利，收取对方的商业贿赂，加大不必要的采购量，带来了过高的应付账款，侵害小微企业利益。有些小微企业因对对方提供的商品或劳务存在质量瑕疵或质量保证期未满足形成有争议的或待付的应付账款，甚至还有一些不正确的应付账款处理方式，出现赖账、恶意拖欠等行为，这种行为无疑带来应付账款日益增加。

小微企业在接受商品或劳务的同时也在为市场提供商品或劳务，在其经营过程中，也会经常遇到提供商品或劳务后，迟迟收不到货款的情况。由于资金收不回来，企业的有限资金过多的积压在应收账款上面，资金供应链不畅，必然影响采购环节的资金投入，为了维持正常经营，企业必须进行赊账采购，自然形成应付账款。

##### 3.2.2 供应商主观原因

商品或劳务供应商为了提高市场占有率，扩大销售，在销售时往往会给出一些条件，例如赊销。因为供应商的这些条件使得买方可以延期支付货款，从而产生了应付账款。在目前经济下行买方主导市场经营的条件下，这种方式产生的应付账款是买卖双方都愿意发生的，对于小微企业来说，付款期限的放宽更有利于企业资金的运转。由供应商赊销形成的应付账款属于商业信用，是应付账款的主要成因。

### 4. 基于“供给侧改革”小微企业应付账款存在问题的对策建议

#### 4.1 来自小微企业内部的举措

##### 4.1.1 更新应付账款管理的观念

小微企业应从经营战略高度审视应付账款管理，就像应收账款那样重视对应付账款的有效管理，与供应商达到共赢，既可在业内赢得好口碑，也为经营提供更广的发展空间。因此，小微企业要认真分析应付账款的范围、结构、数额、比例及支付时间，积极应对应付账款的处理过程，完善企业内部控制制度，提高管理人员的工作素质和能力。应付账款处理如果不

当会带来不良后果应成为小微企业从管理层到普通员工的共识。小微企业要摒弃“小富即安”思维、“山寨”底板、“倭子”形象，建立现代企业制度，运用互联网+等先进技术，适当调整产品或劳务结构，科学筹划产能和资金流向，把有限的资金用在刀刃上，树立“大市场”观念，适应需求结构的变化，增加有效供给，谋求和实现业内供给与需求之间的平衡。

#### 4.1.2 稳定供应商关系

良好的供应商关系是企业应付账款管理的基础。企业应该收集供应商的相关信息，强化数据库间的链接，并促进数据间自动汇总、分析的功能，实现数据和财务信息系统中供应商档案完全匹配。企业应当利用财务软件建立完善的供应商信息档案。根据供应商的类别按时列示动态的交易情况记录，加强与供应商的日常联系，保持友好的合作关系。企业还应订立规范的采购合同范本，合理赊欠，减少成本，规避风险，明确规定双方的义务和权力，以免日后出现不必要的法律纠纷。

#### 4.1.3 制定应付账款管理制度

小微企业可以结合自身实际建立应付账款管理制度，如应付账款的核对制度企业应建立完善的应付账款审核过程。发生应付账款时，采购人员必须提交采购申请、采购单、采购合同、入库清单、发票、验收证明等相关凭证，建立应付账款核对制度，完善的审核过程。同时要制定发生应付账款每一环节相关责任人的职责，规范业务发生程序，杜绝、打击违规舞弊行为。通过建立应付账款管理制度，可以使人人职责明确，自我约束，相互监督，不同的应付账款建立相应的管理方法，保证在合理的信用条件下选择恰当的支付时机和方式，树立小微企业的良好信誉形象，提升融资能力。

### 4.2 来自小微企业外部的举措

#### 4.2.1 完善政策支持和社会服务

政府要构建和完善支持中小企业发展的各项优惠措施和服务性政策，对中小企业实施税收减免、利率优惠、财政补贴等措施，帮助小微企业降低经营成本，提高其发展能力，淘汰落后产能，淘汰“僵尸企业”，使小微企业从捉襟见肘、疲于账款中解脱出来。引领小微企业向创新领域、新兴领域发展，转变政府职能，简政放权，积极构建“亲”“清”新型政商关系，支持服务于小微企业发展的多层次的社会服务体系的构建，解决其在发展过程中面临的信息不对称、社会资源严重缺乏的问题。建立健全促进小微企业技术创新的法律法规政策支持体系，用法律的手段保护小微企业的知识产权和技术创新的成果转化，酿造有利于小微企业健康有序的发展环境。

#### 4.2.2 加强社会信用体系建设

加快适应小微企业的社会信用体系建设，实现信用基础性法律法规和标准体系基本建立，以信用信息资源共享为基础的覆盖全社会的征信系统基本建成，信用监管体制基本健全，信用服务市场体系比较完善，守信激励和失信惩戒机制全面发挥作用。加大对“老赖”和“跑路”的惩戒、打击力度，培育和规范信用环境，保护依法、合理赊欠，维护小微企业主体权益，提升小微企业整体竞争力，在全社会形成“诚信光荣、失信可耻”的良好风尚。

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## The Research and Design of the Agricultural Products Traceability System Based on Web

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**Keywords:** Traceability; Agricultural products; QR code; Design; Ajax.

**Abstract.** By analyzing the current situation and significance of agricultural products traceability system, puts forward the necessity of constructing the traceability system based on Web. The paper briefly describes the system architecture of agricultural products traceability system, requirements analysis, database design and development platform choice, and expect to give some guidance to traceability system developers, have a certain guiding role to help food quality and safety management.

## 基于Web的农产品溯源系统的研究与设计

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**关键词:** 溯源; 农产品; 二维码; 设计; Ajax

**中文摘要.** 本文通过分析农产品溯源系统现状及意义, 提出了构建基于Web的溯源系统的必要性, 文章简要描述了农产品溯源系统的系统架构, 需求分析, 数据库设计和开发平台的选择, 期望对溯源系统开发的人员有一定指导作用, 能够助力食品质量安全管理工作。

### 1. 现状

农产品加工是我国农村经济的重要支柱产业, 对推动农业发展、增加农民收入, 改变农村面貌, 推动国民经济持续、稳定、健康发展具有重要意义。农产品加工随着人类文明的发展而不断更新, 特别是在我国改革开放和加入WTO以来, 在巨大的市场需求拉动下, 农产品由原来的自给自足, 作坊式加工, 逐渐发展成企业流水线加工模式, 成为农业发展中发展最快的行业之一。

作为鄂、豫、陕、渝毗邻地区唯一的区域性中心城市，十堰市位于中国中央山地秦巴山区汉水谷地，是鄂西生态文化旅游圈的中心城市之一。近年来，十堰市不断调整优化农业种植结构，围绕特色、规模、品牌、效益四个环节，积极发展高产、优质、高效、生态、有机的山区特色现代农业，突出发展秦巴山区特色粮油产业，努力构建秦巴山区特色粮食产业化体系，并通过龙头企业带动地区特色产业发展。

另一方面，由于十堰的地理位置偏远、交通不发达、农产品的种植规模小、经营分散和品牌保护不力等原因，农产品的资源优势难以转化为市场优势，不能发挥应有的经济效应和效应。目前，十堰农产品信息化的水平还比较低，导致农产品信息不能充分共享。由于不能获得准确的市场信息，农户往往根据经验来盲目生产，最终导致供过于求；由于缺乏确定的和可追溯性的供求信息，大量的假冒伪劣产品进入市场，农产品的质量安全问题开始被消费者质疑。因而，农产品要想做大做强，有必要将信息技术引入农产品生产加工企业，例如农产品供求交易平台，农产品溯源系统就能很好的解决现有问题。

近年来国内的苏丹红、地沟油、三鹿奶粉、“瘦肉精”、新西兰恒天然事件，这些食品安全重大事件的频繁发生让人们对食品安全产生了极大的担心，造成了巨大的社会影响。于是天然有机农产品迅速的获得大批消费者的青睐，这为农产品生产企业带来机遇的同时，也对农产品质量提出了更高的要求。为了保证农产品的质量，也就必须对农产品生产的每一个环节（从种子到成品）进行监督，必须要求每一个环节的产品都符合标准，这就必须建立一套完善的农产品溯源系统，让消费者放心的同时也提升企业形象。

## 2. 意义

溯源体系，覆盖农产品生产基地、农产品加工企业、农产品终端销售等整个农产品产业链条的上下游，通过信息共享，服务于消费者。一旦农产品质量在消费者端出现问题，可以通过农产品标签上的溯源码进行联网查询，查出该农产品的生产企业、农产品的产地、具体农户等全部流通信息，明确事故方相应的法律责任。此项制度对农产品安全与农产品行业自我约束具有相当重要的意义。正因为如此，农产品溯源系统已经成为农产品国际贸易发展的趋势之一。农产品溯源体系也是我国农产品质量安全的根本保证，因此，研究与设计农产品溯源系统的重要性日益凸显，农产品溯源系统的建立有着极其深远的意义：

- (1) 能有效保存和传递农产品信息，满足消费者的知情权和选择权；
- (2) 能打破贸易壁垒，增强农产品的品牌竞争力，增加销售量；
- (3) 能增强消费者的信心，促进农产品企业的自律；
- (4) 能给农户提供产品生产加工技术，帮助监管农产品的质量安全；

## 3. 系统框架

农产品溯源主要体现在五个环节，包括农产品的生产环节、加工和农药残留环节、运输环节、零售环节和消费查询环节。根据前期调研，大部分农产品企业在地方政府的配合下所采用的溯源系统均需要实现生产基地、配送中心、检验检疫机构、直营店等单位实现溯源集成信息平台的建设，确保农产品自生产开始便可获得数据监控，同时消费者可通过移动终端查询全部信息。

农产品溯源的基本流程是：首先经过溯源起点，即农产品种植基地录入相关认证的信息进行，包括产地、土壤水质等种植环境信息等。再将各种农产品信息进行录入，然后溯源系统批量打印出二维码，经系统激活后，将每一批次的农产品与对应二维码进行配对，让每个激活的二维码中存储对应批次产品的溯源信息。最后，查询者通过移动终端扫描二维码获取对应溯源信息，并可根据信息做出反馈，一经查询在数据库中记录。由于二维码很容易复制，因此系统生成的每一个二维码，需要对应的随机码，若输入正确的防伪码则将显示认证成功，

错误的防伪码则会提示输入错误，经过查询后的二维码再次查询则会提示用户该二维码已经认证过了，以此让消费者核实产品是否真实。

#### 4. 需求分析

系统的用户主要分为：平台管理员、企业管理员、企业员工和消费者。平台管理员会给符合要求的企业开放相应权限，给相应的企业分配系统管理员操作权限；企业管理员负责对系统后台各类功能进行管理维护；企业员工负责录入生成各类农产品数据，为用户查询提供基础数据；消费者可利用移动终端查询系统提供的数据信息。

系统在功能模块上应包含溯源信息管理、二维码管理、企业员工管理和权限分配管理模块。溯源信息管理包括企业信息管理、产地信息管理和产品信息管理；二维码管理包括二维码生成、二维码激活、查询生成记录、查询激活记录、查询二维码状态；企业系统管理员为员工分配帐号及权限，员工可进行溯源信息管理与二维码管理；权限分配管理模块能够为企业分配管理帐号。

#### 5. 系统设计

系统应属于B/S结构，即浏览器/服务器结构。B/S结构是WEB兴起后的一种网络结构模式，这种模式将系统功能实现的核心部分集中到服务器上，简化了系统的开发、维护和使用。

数据库的设计应包含用户表，员工表，企业表，产地信息表，产品控制信息表，产品表，产品批次表，二维码表等，为保证数据的完整性和一致性，产地信息表和产品控制信息表还需要一些基础数据表来作为参考表。

系统可选用PHP结合MVC框架、JQuery、Ajax等技术来编码实现业务逻辑，也可采用ASP.Net结合JavaScript、Ajax等技术来编码实现，数据库方面可采用My SQL数据库，也可采用SQL Server 2008数据库。浏览器建议使用Chrome或Fire Fox浏览器进行开发调试。

#### 6. 小结

本文通过分析农产品溯源系统现状及意义，提出了构建基于Web的溯源系统的必要性，文章介绍了农产品溯源系统的环节、流程、用户划分、功能模块划分、数据库设计、开发平台选择等，期望对进行溯源系统开发的人员有一定指导作用，希望有更多更好的溯源系统开发出来，从而提供一个合格可靠的管理系统平台，能够侧面助力食品质量安全管理。

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## Research on the Management Situation of Youth and Children's Philanthropic Foundations in China

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**Keywords:** Philanthropic Foundations; Young Children; Management Performance.

**Abstract.** This paper analyzed 196 Youth and children's philanthropic foundations and found that the development of foundations are not balanced, after 2011 non-public funds growth is far higher than the public funds, there is a big difference in the level of the foundation's website management, the management of volunteers is not standardized, information transparency is not high, and some foundations are very poor to raise money. It is proposed that a good policy environment should be created continuously, the supervision of the foundation should be strengthened, and youth and children's philanthropic foundations should improve internal management level.

## 中国青少年儿童基金会的管理现状研究

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**关键词:** 公益基金会; 青少年儿童; 管理绩效

**中文摘要.** 通过对中国196家青少年儿童基金会的数据分析，发现基金会地区发展不平衡，2011年后非公募基金会的增速远高于公募基金会，基金会网站管理水平差异较大，对志愿者的管理不够规范，透明度总体偏低，部分基金会的募捐能力不足，个别基金会在公益慈善方面全年无投入。研究认为应继续营造良好的政策环境，加强对基金会的监管，青少年儿童基金会必须提升内部管理水平。

### 1. 引言

经过十多年的酝酿，中国历史上的第一部慈善法于2016年3月16日通过。慈善法出台后，民政部为贯彻落实慈善法，针对基金会发展的实际情况，组织了《基金会管理条例》的修订，新的《基金会管理条例》于2016年9月1日与《中华人民共和国慈善法》同时实施。

显然，中国对公益慈善事业日益重视为中国公益慈善的发展营造了更好的环境，带来了更多的机会。根据基金会中心网的数据，2014 年底，中国基金会数量为 4200 多家，而到 2016 年 9 月底则超过了 5200 家，基金会进入到快速增长期。基金会关注的领域很多，如扶危济困、环境保护、文化教育卫生体育、公共服务、妇女儿童、老年人等，其中青少年儿童作为祖国的未来，其生存发展状态倍受关注，是众多公益机构开展公益项目的主要对象之一。本文将基于基金会中心网中青少年儿童类基金会的数据，对中国青少年儿童基金会的运营状况进行分析，并针对性地提出发展建议，为这些基金会更好地实现其宗旨提供借鉴。

## 2. 样本描述

2016 年 6 月 13 日至 6 月 15 日我们在基金会中心网中搜索 4951 家基金会名称中包含了“青年”、“少年”、“儿童”或“学生”四个词中任意一词的基金会，得到了 196 个样本，我们采集了这 196 家基金会的基本信息和 2014 年的财务信息（注：本文中所有表格的数据均为截止 2016 年 6 月 15 日基金会中心网的数据）。基本信息的内容包括：基金会的中英文名称、地址、登记证号、机构代码、机构官网、宗旨、业务范围、关注领域、基金会类型、基金会范围、登记部门、志愿者数量、全职员工数量、成立时间、透明指数得分、理事会和监事会的情况等信息。财务信息的内容包括：基金会净资产、年度总收入、捐赠收入、投资收入、服务收入、政府补助收入、其他收入、年度总支出、用于公益事业支出、工作人员工资支出、行政办公支出和其他支出等信息。我们对 196 家青少年儿童基金会的类型、范围、成立时间、登记部门、志愿者数量、透明指数得分等情况进行了统计（见表 1）：

表1 196家青少年儿童基金会的基本情况

项目	分类	数量	项目	分类	数量
基金会类型	公募	132	有无网站	有网站	115
	非公募	64		无网站	81
基金会范围	地方	190	志愿者数量	1-100 (包含 100 人)	55
	全国	6		101-500 (包含 500 人)	13
登记部门	县级	3		501 及以上	6
	市级	16		0	67
	省级	172		未披露	55
	部级	5		10 分及以下	20
成立时间	1990 年及以前	20	透明指数得分	10-50 (含 50)	39
	1990-2000 年 (含 2000 年)	48		50-60 (含 60)	28
	2001-2005 年 (含 2005 年)	14		60-70 (含 70)	25
	2006-2010 年 (含 2010 年)	53		70-80 (含 80)	13
	2011-2015 年 (含 2015 年)	56		80-90 (含 90)	8
	2016 年至今	5		90-100 (含 100)	32

## 3. 中国青少年儿童基金会基本情况分析

### 3.1 基金会类型总体以公募型为主，2011年后非公募基金会增速远高于公募型

中国青少年儿童基金会中公募型基金基金会数量为 132 家，占比 67.3%，差不多是非公募型基金基金会的 2 倍。结合两类基金会的成立时间作进一步的分析，发现：2011 年后成立的非公募基金会远高于公募基金会（见表 2）。我们认为，这可能与 2011 年爆发的“郭美美事件”以及被媒体曝光的红十字会“天价餐”等系列事件有一定关联。2011 年传出的负面信息严重地损伤了社会公众对官办公益机构的信任，与此同时，以壹基金为代表的管理规范、透明度较高的民间公益机构脱颖而出。在这样的背景下，公募基金会的发展势头有所减弱，非公募基金会则迎来了快速成长的机遇。

表2 2011年-2016年中国青少年儿童非公募基金会和公募基金会成立数量对比

时间(年)		2011	2012	2013	2014	2015	2016	合计
成立数量	非公募基金会	2	9	6	7	14	3	41
	公募基金会	4	3	6	2	3	2	20

### 3.2 公募型基金会比非公募基金会更重视网络沟通渠道，各基金会网站管理水平参差不齐

网站是基金会对外宣传、公开信息、与捐赠者建立纽带关系的重要平台。目前，青少年儿童基金会中有 115 家基金会建有网站，其中公募型基金会 99 家，占有公募型基金会的 75% ( $99/132=0.75$ )，非公募型基金会仅 16 家，占有非公募基金会的 25% ( $16/64=0.25$ )。可见，非公募基金会在网站建设方面与公募基金会有很大的差距。各基金会网站的管理水平也存在一定差距，有些网站设计新颖活泼、内容全面、公益活动宣传形式丰富、对捐款情况进行了实时披露，如中国儿童少年基金会、武汉市青少年发展基金会等，这些网站的管理比较规范。但也有不少基金会网站内容建设不全，数据久久没有更新，已沦为“僵尸网站”。如浙江省红黄蓝儿童慈善基金会，网站数据停留在 2014 年，主页上大部分内容为空，显然该网站已经长期无人打理。

### 3.3 志愿者管理不规范，志愿者数量的披露不准确

为了更好的服务于基金会项目救助对象，提高工作效率，弥补人力资源的不足，基金会应充分调动社会资源，招募志愿者，建立志愿者管理制度。只有对志愿者进行有效管理，才能确保基金会和志愿者获得双赢。从基金会中心网的数据来看，有 55 家基金会没有披露志愿者的数量，有 67 家基金会的志愿者数量为 0，74 家基金会的志愿者数量最多的达 5 万人，最少的仅 1 人。我们抽查了志愿者数量为 0 的部分基金会，发现其中有些基金会的公益慈善活动中是有志愿者参与的，但这些志愿者并没有被统计到基金会中心网的数据之中。如北京扶助贫困儿童就医健康基金会，在 2014 年曾被报道“组织爱心志愿者等一行 18 人前往河北任丘对诺瑟残婴福利院……”，但在基金会中心网中该基金会的志愿者数量为 0。有的基金会制定了十分详细的志愿者管理办法，如北京春苗儿童救助基金会，对志愿者管理目标、招募流程、培训、评估等都做了详细的规定，但是志愿者管理规定和申请的入口都比较隐蔽。值得借鉴的是中华少年儿童慈善救助基金会，该基金会不但在主页设有志愿者平台这一版块，还在网站首页左侧设有志愿者报名的入口，可以直接点击进入报名页面，十分醒目和方便，因此，该基金会的志愿者数量达到了 5 万之多。

### 3.4 基金会透明度还有很大的提升空间，公募型基金会的透明指数远高于非公募型基金会

基金会中心网开发了一套基金会透明度的评价系统，即中基透明指数，简称透明指数。透明指数总分等于 41 个指标的分数之和，满分 100 分，其中基本信息总分为 13.2 分，财务信息总分为 24 分，项目信息总分为 39.2 分，捐赠及内部建设信息总分为 23.6 分。透明指数分数由四个参数决定，包括：指标是否披露、指标权重、信息披露渠道和信息披露的完整程度。基金会可以通过透明指数了解自身透明程度在全国范围的位置，并根据标准增加自身透明度，公众则可以通过透明指数为捐赠参考，促进慈善行业透明度的增加和公信力的增强。在全部 196 家基金会中有 31 家没有进行透明指数的评分，其原因可能是由于成立时间较晚，年度工作报告等还未出台等，使得指标体系中要求的数据暂时缺失，无法进行评分。其余 165 家基金会的平均透明指数得分仅为 57.17，其中，125 家公募型基金会得分为 62.98，40 家非公募型基金会为 38.99 分，公募型基金会的透明度远高于非公募型基金会。

### 3.5 基金会地区发展不平衡

我们对 196 家基金会的注册地址进行了统计（见表 3），发现广东、北京和江苏的青少年儿童基金会最多，西藏、海南和广西最少。广东的公益事业发展较早，政策也相对更加开放，



公益慈善组织发展很快；北京则是凭借其政治经济文化中心的优势，成为众多全国性大型社会组织的总部所在地；江苏对慈善事业的扶持力度不断加大，2015年4月出台了中国首个省级《关于促进慈善事业健康发展的实施意见》，对慈善目标进行了量化，提出了政府支持指数、社会捐赠指数、慈善组织指数、志愿服务指数、慈善文化指数和慈善透明指数等六大指数目标，还借鉴国外先进的慈善理念和举措提出了支持设立小区互助基金等做法。这些地区无论是公益慈善理念还是具体的实践都走在了全国的前列。

表3 中国青少年儿童基金会的地域分布情况

注册地址	基金会数量	注册地址	基金会数量	注册地址	基金会数量	注册地址	基金会数量
广东	17	新疆	7	安徽	5	陕西	5
北京	16	内蒙古	6	山东	5	山西	4
江苏	13	辽宁	6	河南	5	吉林	4
上海	9	四川	6	湖北	5	贵州	4
福建	8	江西	6	河北	5	广西	3
湖南	8	天津	5	甘肃	5	海南	3
云南	8	黑龙江	5	宁夏	5	西藏	1
重庆	7	浙江	5	青海	5	合计	196

## 4. 中国青少年儿童基金会财务状况分析

### 4.1 中国青少年儿童基金会的总体财务情况

中国青少年儿童基金会中公募型基金和非公募基金会的总体财务情况见表4：

表4 中国青少年儿童非公募基金会和公募基金会的财务情况对比

项目	财务数据（单位：万元）	
	非公募基金会	公募基金会
平均净资产	394.95	4830.76
年度总收入	283.07	2404.08
● 捐赠收入	253.32	1983.63
● 投资收入	12.04	135.53
● 服务收入	2.03	0.047
● 政府补助收入	10.68	199.11
● 其他收入	3.88	85.76
年度总支出	244.57	2131.40
● 用于公益事业的支出	227.78	2001.09
● 工作人员工资支出	9.41	42.80
● 行政办公支出	3.57	30.12
● 其他支出	2.61	42.64

### 4.2 中国青少年儿童基金会的财务状况分析

#### 4.2.1 公募基金会的资金运作数量远高于非公募基金会

根据《基金会管理条例》，基金会开展公开募捐，应当依法取得公开募捐资格。未取得公开募捐资格的基金会，可以在发起人、理事会成员等特定对象范围内开展定向募捐。因此，公募基金会在收入来源上比非公募基金会范围要广得多且更具灵活性。从财务数据看，公募型基金会的平均净资产、收入和支出的绝对值都远高于非公募型基金会。

#### 4.2.2 基金会的公益活动总体开展较活跃，少数基金会募捐能力不足

非公募基金会和公募基金会的年度总支出占同年度总收入的比率分别为86%和87%。基金会的主要收入来源于捐赠，非公募基金会捐赠收入占年度总收入的89%，公募型基金会略

低为 83%。基金会的主要支出用于公益事业，非公募基金会用于公益事业的支出占年度总支出的 93%，公募基金会为 94%。这些数据说明总体上基金会的公益活动开展是比较活跃的。但具体到单个基金会时发现：除一家 2014 年新成立的基金会外，有 11 家基金会 2014 年度的捐赠数据为 0（见表 5），有 2 家基金会 2014 年度的公益事业支出为 0（见表 6）。其中，北京扶助贫困儿童就医健康基金会在 2014 年获得捐赠收入达 320 万元，但当年度却没有在公益事业上做出任何投入。

表 5 中国青少年儿童 2014 年度捐赠零收入基金会列表

基金会名称	类型	成立时间 (单位: 年)	注册资金 (单位: 万元)	透明指数得分
福建运盛青年基金会	非公募	1993	300	61.60
湖南育才关心青少年基金会	非公募	2004	200	50.40
广西桂嘉汇青少年儿童救助基金会	非公募	2008	200	48.80
浙江省红黄蓝儿童慈善基金会	非公募	2009	200	86.00
江苏宏大青少年人才发展基金会	非公募	2009	1000	59.60
湖南正阳大学生创业基金会	非公募	2010	200	50.40
陕西榆林平安妇女儿童基金会	非公募	2012	400	47.20
南京市中小学生科技活动基金会	公募	1992	500	47.20
四川省青年科技基金会	公募	1993	400	61.60
宁夏青年创业就业基金会	公募	2010	400	22.40
新疆生产建设兵团青年创业增收基金会	公募	2013	480	22.40

表 6 中国青少年儿童 2014 年度公益事业零支出基金会列表

基金会名称	类型	成立时间 (单位: 年)	捐赠收入 (单位: 万元)	透明指数得分
新疆生产建设兵团青年创业增收基金会	公募	2013	0	22.40
北京扶助贫困儿童就医健康基金会	公募	2003	320.66	28.00

#### 4.2.3 基金会的管理费用普遍较低，创收能力有一定的提升空间

非公募基金会和公募基金会的行政办公支出、工作人员工资支出等费用总和占年度总支出的比重均未达到 10%，属于比较低的水平，其原因可能是各基金会的专职人员数量较少。根据《基金会管理条例》，基金会可以开展保值、增值活动，但从数据上看，基金会在投资收入和服务收入方面的表现一般。仅有 11 家非公募基金会和 44 家公募基金会在 2014 年度实现了投资收入，其余 141 家基金会 2014 年没有产生投资收入。在服务上，共有 4 家基金会产生了收入。此外，有 4 家非公募基金会和 25 家公募基金会获得了政府补助。

## 5. 研究结论

### 5.1 政策环境为公益基金会的发展提供了保障

随着《慈善法》、《基金会管理条例》、《关于改革社会组织管理制度促进社会组织健康有序发展的意见》等一系列关于公益慈善事业发展的法律法规的出台，慈善的概念从传统的扶贫济困救灾扩大到所有有利于社会公共利益的活动，慈善组织的范围也得到了扩展，包括基金会、社会团体和社会服务机构，即“民办非企业单位”，公益慈善机构的注册条件、募捐资质等都有所放宽，企业捐赠可以享受税收优惠，对于公益慈善组织的内部治理、退出机制、法律责任和外部监督等也有了明确的规定。最近，民政部确立了 13 家首批入围互联网募捐信息平台的名单，随后又就《慈善组织开展慈善活动年度支出和管理费用标准》（征求意见稿）广泛向社会公众征询意见。从这一系列的举措可以看出，国家对公益慈善事业的重视，并正在积极地扶持社会组织的向着健康可持续的方向发展。

## 5.2 主管部门需要进一步加强对基金会的监管

基金会的透明指数总体偏低，个别基金会全年没有开展任何公益慈善活动，有些基金会没有及时提交年度工作报告和财务报告，对于捐赠收入的使用没有清晰的说明，信息披露不全面。由于不断有新的基金会成立，各级民政部门的资源有限，监管压力非常大，要实现每个基金会的有效监管确实存在着一定的难度，但不能因此不履行或打折履行职责。反而，为了公益慈善事业的持续健康发展，主管部门需要不断创新工作方式方法，提高工作效率，加大对基金会的监管力度，为社会把好关。

## 5.3 基金会需要进一步提升内部管理水平

有些基金会在志愿者管理、网站管理等方面存在问题，而这些因素都与社会公众对基金会的信任、参与公益活动的意愿等息息相关。总体上看，基金会的全职人员偏少，有些基金会甚至没有全职人员，这必然影响到基金会的日常运行和公益活动的开展，也难以实现对网站内容的及时更新和捐赠信息的及时披露，此外，《基金会管理条例》要求基金会每年要报送年度工作报告和财务会计报告，而这项工作具有一定的专业性，需要专业人才负责这项工作。缺乏相应的全职专业人才对于基金会的长期发展必然是不利的。基金会应加大招募公益人才的力度，创新性地开展工作，提升内部管理水平。

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## Statistics and Analysis of Jinan Urban Resident Income

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**Keywords:** Urban resident; Income; Statistics; Analyze.

**Abstract.** It is important to analyze the income of resident. First of all, individual income not only represents the result of social distribution system, but that also could be appraised as one kind of insights that straightly reflects the condition of national economy. Whether the distribution result is impartial or not will apparently influence the stability and harmony of society. Moreover, as an important factor that directly influences the extent of economical market, income level qualifies the demand of purchase: the higher income level the more need. Consequently, study of the effects by which income affects the list of purchase, is indispensable. Thus, this study directs attention at analysis and statistics of the factors influencing income level and the earning situation of Jinan urban resident.

## 济南市城市居民收入统计分析

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**关键词:** 城市居民; 收入; 统计; 分析

**中文摘要.** 研究居民收入具有很强烈的现实意义: 首先, 居民收入是社会成员经济利益分配的最终体现, 具有很强的社会敏感性。收入分配合理与否, 会对社会成员心态的平和程度、社会关系的协调程度以及社会形势的稳定程度造成影响。第二, 作为直接影响市场容量大小的重要因素, 居民收入水平的高低能够直接决定消费者购买力水平: 收入水平高, 则购买力强, 反之则弱。因此, 研究针对影响济南城市居民收入水平因素和收入现状进行统计分析。

## 1. 引言

一个省份的省会，往往是经济建设发展最好的，可以代表一个地区的经济发展。但作为一个四面环山的城市，地理条件严重影响交通建设，为什么济南市能够作为山东省省会，济南的城市消费水平是怎样的，收入水平又如何？济南市的城市化进程非常快，农村人口大多零散处于城市周边。基于此，本次研究针对济南市城市居民收入水平进行统计分析，研究主要影响因素，并进行收入变化预测。

## 2. 济南市城市居民收入状况

中国的城市市民人均消费水平，以及城市经济发展状况、城市化程度，普遍与居民收入有明显的正相关关系，例如我国城市发展最全面快速的北京、上海、广州、南京、天津、杭州，其省市GDP也在全国范围内处于较高水平。基于此首先对济南市城市居民收入进行研究，根据国家统计局编写的《济南统计年鉴2009》所提供统计数据以及其他相关资料，以济南市城市居民总体作为研究对象，不考虑不同类型、不同地区城市的差别。下面，将从三个方面来分析济南市居民收入的变动情况。

### 2.1 人均可支配收入稳步提高

从图1可以看出，自1978年以来，济南市城市家庭人均可支配收入稳定提高，到2009年，达到了22721.7元，比1978年提高了67.22倍。扣除物价上涨因素，实际上涨水平要低于67.22倍。同时，随着职工年平均工资及每万人中大学生数的上升，家庭人均消费性支出也在迅速上升，上升幅度达到了43.73倍。

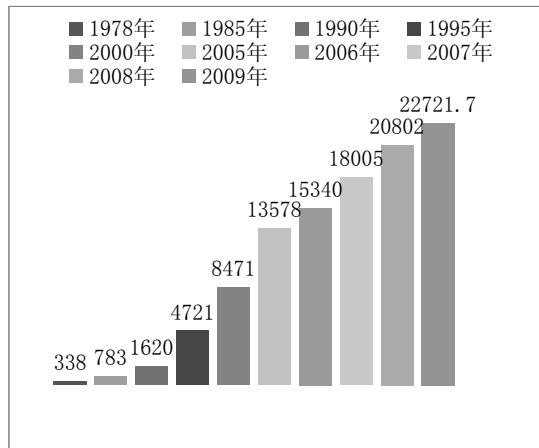


图1 济南市城市居民家庭人均可支配收入变化情况（单位：元）

注：数据来源于《济南统计年鉴2009》

### 2.2 居民收入的提高为家庭生活水平的提高奠定了基础

恩格尔系数是指食品支出总额占个人消费支出总额的比重，能够用来衡量居民的生活水平。从图2可以看出，1978年，1985年，1990年的恩格尔系数分别为57.1%，56.5%和57.5%，居民基本处于贫困线的边缘。1995年，城市居民家庭恩格尔系数下降到47.6%，标志着，居民的生活达到了小康水平。2000年，2007年，2008年，2009年的恩格尔系数分别为34.6%，31.5%，32.1%和32.8%，这表明，济南市居民的生活已经达到了富裕的水平目。

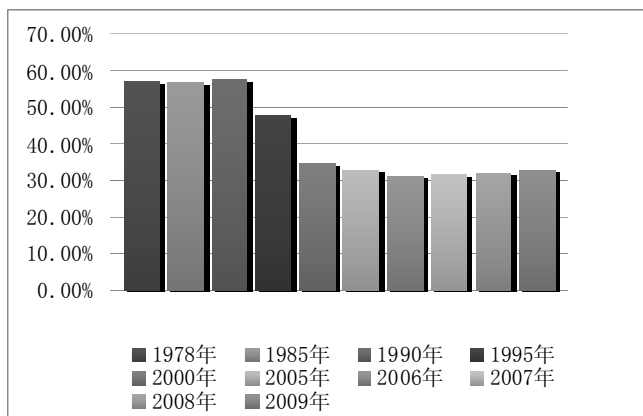


图2 济南市城市居民恩格尔系数变化情况

注：数据来源于《济南统计年鉴2009》

### 2.3 从基尼系数来看居民收入差距在逐步扩大

基尼系数是根据劳伦斯曲线所定义的判断收入分配公平程度的指标。改革开放以来，在居民收入水平，家庭生活水平不断提高的同时，居民的收入差距如图3所示，却有扩大的趋势。1985年和1990年的基尼系数分别为0.15和0.16，均低于0.20，按联合国有关规定，当年的居民收入分配是绝对平均的。1995年和2000年的基尼系数分别为0.21和0.26，虽然居民收入还处于比较平均的状态，却已经有很大的上升。2005到2009年间，济南市的基尼系数在0.3到0.4之间，即居民收入分配处于相对合理状态。2005年为0.33，处于记录的最高值，此后略有波动，虽然从总体上看城市居民收入分配相对合理，但分配差距一直维持在较高水平，没有下降。

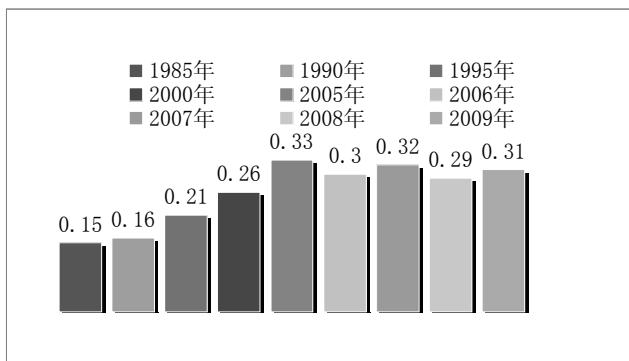


图3 济南市城市居民基尼系数变化情况

注：数据来源于《济南统计年鉴2009》

### 3. 济南市居民收入差距分析

收入分层法是指：将性质相同的，在同一条件下收集的数据归纳在一起，以便进行比较分析。收入分层法作为社会分层法中常用的方法之一，具有直观、清晰的特点。“七等分法”具体是指：最低收入户和最高收入户两极各为10%，其余设定为五个20%收入等级分层。

这里指城市家庭总收入是被调查城市居民家庭全部的实际现金收入，包括经常或固定得到的收入和一次性收入，不包括周转性收入。从表1可以看出，最低居民家庭收入与最高家庭收入之间的差距后者是前者的7.22倍；更低和更高等级家庭收入之间的差距达到了10.43倍。

家庭收入间的差距说明当前的收入分配制度在一定问题。收入分配差距随着经济建设发展逐渐暴露，引起政府与社会的密切注意，其在政府工作报告中被提及的频率越来越高。

表1 城市不同收入层次居民家庭收入基本情况【样本数】（2008年）

指标	单位	平均	最低 10%	更低 5%	低 10%	较低 20%	中间 20%	较高 20%	高 10%	最高 10%	更高 5%
调查 户数	户	600	60	30	60	120	120	120	60	60	30
家庭 人口	人/户	2.83	3.23	3.43	3.29	2.90	2.89	2.79	2.48	2.51	1.96
有收 入者 人数	人/户	2.03	1.77	1.92	2.16	2.06	2.05	2.07	2.08	1.95	1.81
就业 者人 数	人/户	1.51	1.05	0.96	1.66	1.50	1.61	1.56	1.49	1.53	1.30
家庭 总收 入	元	22327 .17	7702. 10	6356. 80	1177 9.72	1560 6.79	2078 4.76	2718 2.35	3487 8.86	55638. 95	6631 3.05
可支 配收 入	元	20802 .17	7019. 92	5762. 94	1087 4.89	1449 2.54	2537 7.91	2537 7.91	3264 1.65	52035. 62	6292 7.78
借贷 收入	元	9021. 92	2731. 90	2226. 19	3899. 27	6642. 05	1050 3.35	1050 3.35	1558 2.11	23231. 87	2941 8.09

#### 4. 济南市居民收入影响因素

对于济南市这种地理条件不便利的特殊省会，研究居民收入很重要的一方面是找出影响因素，根据上述数据分析和讨论，将影响济南市居民收入状况的主要因素归结为：劳动供给、人口状况、其他因素参与分配的格局、政策导向、物价。

##### 4.1 劳动供给

供求定理：是指在其它条件不变的情况下，需求变动将引起均衡价格和均衡数量同方向变动；供给变动将引起均衡价格反方向和均衡数量同方向变动。

居民收入主要来源于工薪收入，其次是转移性收入。低收入群体的收入之所以增长相对缓慢，很大程度是农村的大量剩余劳动力流入城市以及城市存在很多失业人员导致普通劳动者供大于求所致。根据供求定理。可知，这种情况导致了劳动力更加“廉价”，城市更多普通劳动者下岗，部分劳动者的收入难以提高，甚至导致绝对水平下降，同时拉大了普通劳动者与高收入者之间的差距。

##### 4.2 人口状况

同等经济收入条件下的家庭，人口数量少，人均居民收入就会增多；人口数量减少，能有更多的财力、物力进行教育和医疗保健投资，从而提高居民生活水平。从1978年至今，济南市市民生育率明显下降，与此同时平均教育投资则快速增长。在市场经济下，个人的综合素质与收入的高低有很大关系。一般所接受的教育程度越高，能力就越强，收入也就越高。

### 4.3 其他要素参与分配的格局

我国个人收入要素分配的结构特征是劳动收入主导型的。尽管如此，改革开放后城市居民收入的来源结构还是发生了显著的变化，劳动收入来源结构由原来单一的工资收入拓展为多种劳动收入。除劳动收入和资产收入以外，要素收入中知识和经营管理技能的地位明显上升，使拥有者获得的收入高出普通劳动者很多。从1978年到2009年，知识和经营管理技能这两种要素对总收入差距的影响日益增强。

### 4.4 政策导向的影响

政策因素对居民收入差距扩大也有很大影响。1985年，全国工资制度改革，工薪收入特别是奖金的发放制度由平均主义向按劳分配过渡。在这期间，影响居民收入差距变化的改革举措如企业承包制的推行，这一政策的实行不仅拉大了企业内部职工之间工资的差距，拉大了企业及部门之间收入的差距；允许和鼓励非国有经济的发展，这就造就出了高收入职业和群体；价格“双轨制”为少数人获取暴利提供了机会。

### 4.5 物价

济南市城市居民收入总体上是稳步增长的，可是不同群体之间的收入差距却在拉大。劳动报酬在初次分配中过低的比例，严重制约着百姓消费能力和生活质量的提高。不过，增加收入对于大多数居民来说，却是可望而不可及的，而维持物价稳定就成为更现实的选择。若是居民收入没有增加或者增加有限，物价却在大幅上涨，居民的消费上不去，居民收入的提高就不能达到提高居民生活水平的目的。

## 5. 济南市市民人均可支配收入发展预测分析

运用一元线性回归分析的方法，对济南市城镇居民人均可支配收入在2010年时的水平和总量进行初步测算，一元线性回归方程中的 $X$ 代表城镇居民人均可支配收入， $Y$ 代表人均GDP， $a, b$ 为总体参数。方程式表示人均可支配收入与人均GDP两个变量之间的关系。通过对 $a$ 与 $b$ 的最常用的测算公式，对 $a, b$ 的值进行估测，并建立两个变量的一元线性回归方程。

$a, b$ 的测算公式为：

$$\hat{a} = \bar{Y} - \hat{b}\bar{X} \quad (1)$$

$$\hat{b} = \frac{\sum X_i Y_i}{\sum X_i^2} \quad (2)$$

上述方法计算得到估计值 $\hat{a} = 1172.2127$ ， $\hat{b} = 0.4129$ ，代入一元线性回归方程，得到济南市城市居民人均GDP与城市居民人均可支配收入的一元线性回归方程：

$$Y = 1172.2127 + 0.4129X \quad (3)$$

据济南市统计局的《2009年济南统计年鉴》以及其他资料提供的数据初步推算，以济南市2010年GDP值为3350亿元，全市人口数为600万为参照，2010年的人均GDP为55833.333元，计算可得，当2010年人均GDP为55833.333元时，人均可支配收入约为24227.023元。

## 6. 结束语

通过统计可以发现，济南市居民的收入差距问题比较突出，基尼系数一直处于高位临界点，没有明显下降。通过数据统计成功找出了其主要影响因素：劳动供给、人口状况、其他因素参与分配的格局、政策导向、物价。政府应从上述收入影响因素入手改善健全分配机制，



积极促进就业，加大培育非公有制企业的力度，规范非正规就业，建立规范完善社会保障制度，提高救助待遇水平，健全社会公益捐助制度，以实现收入分配的再均衡，促进社会进步。

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**Chapter 4:**  
**Education Reform and Exploration**



## Reform Exploration for the Construction of Computer Science and Technology Specialty

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**Keywords:** Computer science and technology specialty; Course group; “3+1” education mode

**Abstract.** Dalian University of computer science and technology specialty focus on training comprehensive quality and engineering practicing ability in daily teaching, advocates "applying their knowledge" idea, embodies the "engineer" idea in cultivating talents, so that it not only enables graduates stronger foundation and professional background, but also a higher overall qualities and a stronger abilities of engineering practice. Through many years' professional constructions, the major forms the "thick professional foundation, heavy engineering practice, and the cultivation of innovation" professional characteristics.

## 计算机科学与技术专业建设改革探索

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**关键词:** 计算机科学与技术专业; 课程群; “3+1”培养模式

**中文摘要.** 大连大学计算机科学与技术专业在日常教学中注重综合素质和工程实践能力的培养, 倡导“学以致用”的理念, 体现“工程师化”的人才培养思想, 使毕业生不但具备较强的基础和专业知识背景, 还能够具备较高的综合素质和较强的工程实践能力。经过多年的专业建设, 本专业形成了“厚专业基础、重工程实践、求培养创新”的专业特色。

### 1. 专业改革、建设情况

大连大学计算机科学与技术专业成立于1989年, 2001年和2007年分别被确定为校级重点专业和示范性专业; 2003年获得计算机应用技术二级学科硕士学位授权点, 2008年以来先后被批准为辽宁省重点学科、优势特色重点学科, 2011年获批了计算机科学与技术一级学科硕士学位授予权。本专业现有专业教师13人, 其中教授3人, 副教授7人, 具有博士学位的教师7人。在科研方面, 近3年来, 本专业承担国家863计划项目3项, 国家自然科学基金6项, 其他

省部级项目5项。经过多年的专业建设，本专业形成了“厚专业基础、重工程实践、求培养创新”的专业特色。近年来本专业先后建设了“辽宁省微电子通信与IT产业辽宁省紧缺本科人才培养、培训基地（2006年获批）”、“辽宁省高校信息类专业应用型人才培养模式改革创新实验区（2007年获批）”、“辽宁省普通高等学校本科实验教学示范中心（2011年获批）”和“辽宁省工程人才培养模式改革试点专业（2012年获批）”。

### 1.1 制定培养目标与培养要求

为贯彻落实《教育部关于全面提高高等教育质量的若干意见》（教高〔2012〕4号）以及大连大学提出的创建全国一流教学研究型地方大学的目标要求，固化计算机科学与技术专业教学质量与教学改革工程建设所取得的成果，践行“三个面向”，进一步优化人才培养过程，2013年开始，启动了2014版计算机科学与技术专业本科专业培养方案修订工作。新版培养方案强化了本科人才培养的基础性和适应性，更加注重学生知识、能力、素质的协调发展，加强了实践能力和创新精神的培养，丰富和优化了实践教学内容，完善了实践教学体系。

新版培养方案所制定的培养目标为：“本专业培养具备德、智、体全面发展，掌握自然科学基础知识、计算机科学基础理论、软硬件工程思想及应用知识，具备软硬件设计开发能力以及软硬件实践和项目组织的初步经验，能够在计算机、信息、电子等领域从事管理、研究、设计或开发方面的工作，具有创新、创业意识，具有竞争和团队精神，同时具有良好外语运用能力的软硬件工程应用型人才”。培养要求为：“本专业学生主要学习计算机体系、软件工程、计算机网络、嵌入式系统等领域的的基本理论和基本知识，受到科学思维方法和研究方法的基本训练，掌握系统的分析、设计与开发的基本能力”。

### 1.2 构建课程体系

以CDIO工程教育理念为指导，构建了如图1所示的课程体系：

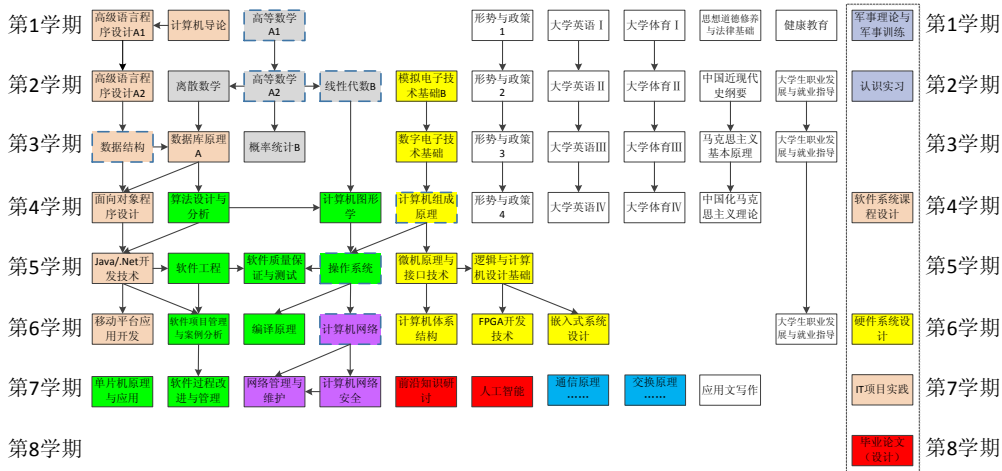


图1 2014版培养方案课程体系

在课程体系贯穿“两条主线”，辐射形成“五个课程群”，融入“校企联合进行的一年工程实践”，体现“厚专业基础、重工程实践”的专业特色。

#### (1) 课程群中贯穿“两条主线”

① 硬件设计课程线：课程体系中加强电类课程及计算机硬件课程，构成计算机硬件课程群。

② 软件开发课程线：构成软件开发课程群，重视阶段性综合性训练，课程之间内容紧密关联、技能相通。

#### (2) 辐射形成“五个课程群”

课程体系辐射形成Java课程群、.Net课程群、理论课程群、硬件设计课程群、网络课程群等五个课程群。

#### (3) 融入“校企联合一年工程实践”

在第7-8学期一年时间里，学生可在企业进行校企合作的课程培训、IT项目实践和毕业设计（论文），培养学生学习IT新技术能力、项目开发设计能力、创新意识、团队合作精神、职业素质。

### 1.3 以课程群为主体的教学内容与教学方法改革

五个课程群分别制定了课程负责人，课程负责人牵头，确定课程群的总体定位和工程能力培养目标，研究课程群的课程内容及相互关系，注重课程之间、课程群与其他课程的衔接设计，以及对实际工作能力的培养和锻炼。以校教改项目为驱动，研究各自的教学内容和教学方法的改革。4年来，申请教改项目7项，改革效果较为显著。

### 1.4 实践教学改革

实践教学改革重构了实践教学体系，创新实践教学模式。把工程型人才培养的CDIO理念，即“做中学”和“基于项目教育和学习”融入到了新的实践教学体系之中。建立了“以项目设计为导向的实践教学体系”，分级设置实践教学项目；开展企业有效参与的专业认识实习、课程设计、毕业设计（论文）、项目实践、创新设计等，改革实践教学内容，创新实践教学模式；校内和校外结合，加强实践环境建设，拓宽工程实践渠道；建立考核监控机制，注重实践教学实效，提高实践教学质量。

为了更好的检验校内实践教学的改革效果，本专业也积极努力将学生送入到企业实习实训，3年来，先后与20多家企业合作，接纳学生进入企业进行校外工作实践；与3家企业签订了实习基地协议，与一家企业签订了校内实践合作协议。

## 2. 取得的阶段性成果

近年来，计算机科学与技术专业贯彻执行以CDIO工程教育理念为指导，在课程体系中贯穿“两条主线”，辐射形成“三个应用模块”融入“校企联合一年工程实践”，体现了计科专业“厚专业基础，重工程实践”的专业特色。

### 2.1 修订培养方案、构建课程体系

#### (1) 硬件课程一条线

为进一步突出计科专业特点，在2014年修善了2014级计科专业培养方案，在新一轮培养方案中，针对国内计算机专业“重软轻硬”的现状，在课程体系中加强电类课程和计算机硬件课程建立，提出了“面向系统能力培养的计算机硬件课程群”建设，增加了模拟电子技术基础、逻辑与计算机基础、EDA技术及应用和硬件系统课程设计等课程，建立起完整的“硬件课程一条线”。并且将4门硬件课程的知识体系贯穿在一起，在相关的实验课和课程设计中采用统一的实验平台，通过让学生完成从计算机部件到整机设计实验，使学生深入理解计算机系统的基本组成和工作过程，从而提高学生的硬件系统设计能力和创新能力。

#### (2) 软件开发课程一条线

目前软件开发课程共分为三个层次：第一层是计算基础课程群，包括数据结构、数据库系统原理、计算机组成原理、操作系统、计算机网络等课程；第二层是软件工程理论课程群，包括软件工程、软件系统分析与设计、软件质量保证与测试、软件过程改进与管理、软件项

目管理与案例分析等课程；第三层是软件开发技术课程群，包括高级语言程序设计、面向对象程序设计、.Net开发技术等课程。

## 2.2 以课程群为主体的教学内容与教学方法改革

近年来，计科专业教学改革在课程群及教学平台建设方面取得了丰硕成果：

(1) 以《数据库系统原理》课程群为例探讨数字化教学资源建设和使用方案，项目在现有的数字化教学资源基础上，进行媒体素材和优秀课件的筛选，整合了北京师范大学继续教育学院提供的名师授课视频资料，对现有的课件进行修改补充，形成了适合学生特点的课件。发表教改论文2篇。

(2) 在网络课程建设方面，教改项目有《以提高教学质量为核心的计算机网络课教学改革研究与实践》和《网络课程群实验教学体系建设的探索》，分别从教学内容设计和实践教学方面进行改革，深入研究计算机网络课程的教学内容和教学方法，以期达到教改合理性和实用性。发表教改论文3篇。

(3) 《.net开发技术》网络教学平台的设计，建立《.net开发技术》课程的网络教学平台，教学方法采用项目驱动的教学方式，充分发挥学生学习的主动性、积极性，体现学生的认知主体作用。发表教改论文2篇。

(4) 在试题库建设方面，基于WEB的通用考试系统及计算机学科基础题库建设，项目是在现用的自主研发的“高级语言程序设计在线考试系统”的基础上，开发完成一个基于WEB通用考试系统和高级语言程序设计课程的题库建设，以此促进计算机专业基础课程考试的规范化，促进教学质量的提高。本题库主要包含三种类型题：选择、填空和编程题。总题量为：2193道题。

计算机导论试题库的建设，实现按照考试需求抽题组卷，授课教师不参与命题过程，由教学管理部门通过试题库统一命题，实现教考分离，试题库总题量达到2010道题，发表教改论文1篇。《操作系统》课程试题库的建设与应用，试题库总题量2763道题。

## 2.3 实践教学改革

在新一轮的培养计划中，大部分实践课程单独设课，提高了实践课程的比例与学分，提高了实验教学中综合性、设计性实验题目比例。认识实习、数据库系统课程设计和软件项目开发课程为独立教学环节，安排在暑期小学期集中进行，校企合作联合指导。从2013年开始，计算机科学与技术加大校企合作的力度，分别与大连华信、大连中软等多家单位达成了实习、课程建设和毕业论文（设计）等环节的合作意向，并与蓝鸥科技（大连）有限公司、北京千锋互联科技有限公司签订了《实践教学基地协议书》。

(1) 2014年7月北京千锋互联科技有限公司参与了2013级认识实习，带领学生完成了“Linux操作系统的初级应用”；2015年北京千锋互联科技有限公司参与了2014级认识实习、2012级生产实习，蓝鸥科技（大连）有限公司参与了2013级的软件项目实践，分别带领学生完成了“HTML5的认识与实践”、“基于Andriod系统的app开发与设计”、“基于iOS系统的app开发与设计”。

(2) 大四上学期的IT项目实践分别采取学生进入软件公司和校内公司进驻实习等形式，采取集中实习方式进行。目前校外实习基地有：北京千锋互联科技有限公司、蓝鸥科技（大连）有限公司、美国径点科技有限公司大连研发中心、达内时代科技有限公司、中软国际（大连）卓越培训中心、大连东软睿道教育信息服务有限公司、大连华信实训中心、尚观科技、大连雨琳信息技术有限公司、QST青软实训等校外实习基地。

校内公司进驻学校参与项目实践。2014年12月翡翠科技（大连）有限公司参与了2011级IT项目实践，完成了“基于Andriod系统的app开发与设计”；2015年10月，蓝鸥科技（大连）有限公司2012级IT项目实践，带领学生完成了“Unity3D手游设计与开发”。企业技术员工还将陆续参与到本科生的课堂教育，与校内教师一起完成《移动平台应用开发》等课程的教学。



企业的参与，将最新最流行的科技技术融入到了日常的教学中，提供学生的动手实践能力，开阔学生的视野，增强学生面对社会挑战的信心。

(3) 毕业设计方面，2011年开始，越来越多的学生被合作企业接受进入到企业参加实习并完成毕业设计（论文），这部分同学在与校内指导教师沟通、材料的提交、材料的规范性等方面存在诸多问题。因此2013由计算机专业教师自主开发的《毕业设计管理系统》（软件著作权登记号：2013SR031536）上线，该系统利用校园网基础平台，实现了毕业论文（设计）全部过程的网络化管理，达到了所有环节的数据网上填写、网上审核、网上统计、网上下载、网上查询，有效的提高了管理效率和数据操作的准确性。系统上线3年，不仅计算机专业的学生受益，同时也影响并带动了信息工程学院其它专业毕业论文质量的提升。

(4) 创新设计和科技竞赛，为学生提供参与企业实际项目开发和工作室创新设计的机会，组织学生参加多种不同级别的竞赛。大学生科技创新活动是本专业的本科教学特色之一，近几年，40余名学生获得了挑战杯创业大赛、ACM大学生程序设计竞赛、国际微软程序设计大赛、全国计算机仿真大赛、国际及全国数学建模大赛、全国大学生电子设计大赛、全国智能汽车大赛等不同级别的奖项。目前计科专业设有两个工作室，分别是计算机硬件与体系结构工作室和图灵软件工程实践与创新工作室，分别从硬件与软件两方面锻炼学生的设计开发与创新实践能力。目前参与的竞赛主要有ACM/ICPC大学生程序设计竞赛、蓝桥杯全国软件和信息技术专业人才大赛和中国软件杯等奖赛。截止到2015年10月学生参加ACM程序设计、蓝桥杯全国软件和信息技术等竞赛，获得亚洲区预选赛三等奖1项、东北区三等奖5项、辽宁省一等奖5项、二等奖8项、三等奖12项。近两年“蓝桥杯”全国软件专业人才设计与创业大赛获奖情况:软件创业团队赛全国选拔赛一等奖一名、二等奖一名，个人赛全国一等奖一名、二等奖两名，三等奖若干名。

## 2.4 教学团队建设

有计划的派遣教师到国内外大学和企业进修学习、合作研究，让教师在理论与实践、课堂与企业相结合的环境中锻炼成长，建设具有企业背景、较高教学水平的“双师型”专业教学团队。为加强硬件课程群建设，在2013和2014年专业先后两次共计派遣4名教师参加教育部高等学校计算机类专业指导委员会主办的基于计算机系统能力培养的教师高级研修班，会议在浙江大学召开，由浙大老师亲自培训指导。2015年专业派遣3名教师到合肥参加“第三届MOOC与高校计算机课程建设”专题报告会，在此次会议上针对计算机类课程的慕课建设进行了深入的探讨，对本专业的课程建设有很大的借鉴意义。类似的派遣专业教师进修学习的情况有很多，这里就不一一列举了。另外，专业每年至少派遣2-3名教师参加中国计算机大会，掌握专业发展的前沿知识和最新资讯，使教学内容与学科发展相适应。目前本专业有一名教师正在美国犹他州立大学做访问学者。

通过一系列课程体系建设和实践教学改革，提高了教学质量与教学实效，计算机科学与技术专业近几年的就业情况非常理想，2014届毕业生年终就业率达到100%，高质量就业率达到43.70%。在2016届毕业生中有一名同学经过几轮笔试与面试顺利进入腾讯公司，已经提前半年多签回就业协议。

## 3. 存在的主要问题及解决方案

(1) 计算机网络课程群建设还需加强。网络相关课程的实验教学内容还需要进一步完善；网络课程群中网络相关课程的实验教学内容之间的衔接还需要进一步加强；网络课程群的实验教学平台需要开放使用，使其成为真正的教与学的交流平台。

计算机网络课程具有概念众多、理论复杂、技术更新快等特点，仍有一部分同学认为掌握和理解起来较困难。解决办法：注重教学重点与难点，进一步改进教学方法；受实验设备

和条件限制,复杂实验不便于开展,比如三层交换机实验、综合组网实验。解决办法:采用视频和演示等手段让学生了解复杂实验的内容和操作步骤。

(2)校内实践基地建设缓慢。受场地制约,一直没有一个固定的,能够让学生在课余时间自发组织,进行课外项目实践的环境。

针对目前存在的问题,下一步改革与建设的重点及措施如下:

(1)跟踪2014版培养方案的执行情况,若发现有不适合的情况及时作出调整。

(2)加大计算机网络课程群的建设。在现有实验环境的基础上,增加实验设备的数量,购进协议仿真软件等,给学生提供更多的动手实践的机会。

(3)建成具有丰富的工程实践经验、具有企业背景、较高教学水平的“双师型”专业教学团队;建立校企联合工程人才培养机制,不仅要把学生送入企业进行实训,还要把教师送进企业进行培训,提供教师自身的实践技能,以便能更好的进行校内实践环节的教学和指导工作。

(4)加快校内实践基地的建设。校内实践环节现在都安排在暑假期间,这期间校内的空闲场地较多。但建立固定的校内实践基地,能更加充分的利用学生平时的业余时间,增强实践的成效。因此需要多协商各部门,找到合适的固定场地。

#### 4. 结束语

本专业从2000年开始积极探索校企合作的计算机专业人才培养模式,利用大连软件外包领军城市的IT技术优势,创建了颇具特色的3年在校内培养和1年在企业培训与实习的“3+1”校企联合软件人才培养模式。2012年2月大连大学-中软国际(大连)实践教学基地入选“辽宁省教育厅校外实践教育基地建设典型案例”。专业注重与国内外大学间的学术交流,与日本长崎综合科学大学、日本京都情报大学院等建立了长期的友好合作关系,每年选拔一定数量的在校本科生去国外交流学习。

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## Exploration on Practice Teaching Reform of Mechanical & Electronic Engineering Major in Transformation Stage -Taking Jilin Business and Technology College as a Case Study

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**Keywords:** Local colleges and universities; Mechanical & electronic engineering major; Transformation; Practice teaching reform.

**Abstract.** It has become an inevitable trend that local colleges and universities in China transform to application technology ones. Taking Jilin Business and Technology College as a case study, according to analysis of the current situation and existing problems of the practice teaching for the mechanical & electronic engineering major, specific measures on reform of practice teaching were proposed from the aspects of setting the link of practice teaching, laboratory construction, the building of the teaching staff, cultivating the students' ability of practice and innovation, school-enterprise cooperation so as to carve out a new way to the training of applied talents in transformation stage.

## 转型发展期机械电子工程专业实践教学改革的探析 -以吉林工商学院为例

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**关键词:** 地方本科院校; 机械电子工程专业; 转型发展; 实践教学改革的

**中文摘要.** 地方本科院校向应用技术型高校转型发展已成为必然趋势。以吉林工商学院为例, 通过分析当前机械电子工程专业实践教学现状及存在问题, 从实践教学环节的设置、实验室建设、师资队伍建设、学生实践创新能力培养、校企合作等方面入手, 提出实践教学改革的具体措施, 为转型发展期应用型人才培养开辟了新路径。

## 1. 引言

目前中国高等教育已从精英化转为大众化,根据教育部官方网站数据,非“211”地方本科院校的数量最多、招生规模最大、人才培养最多[1]。目前,产业转型升级缺人才、高校毕业生就业难等问题越来越成为制约地方高等教育发展的突出矛盾,因此地方本科高校向应用技术型高校转型发展是当前教育改革发展的一项重大战略任务[2]。

吉林工商学院作为地方应用型本科院校之一,承担着为区域经济社会发展提供人才支撑的重要使命。学校在2012年增设了机械电子工程专业,机械电子工程专业具有理论与实践、技术开发与应用紧密结合的特点,是涵盖机械、电子、电气、液压、计算机等专业知识,涉及知识面较广的应用型本科专业。在即将到来的转型发展期,机械电子工程专业在培养本科层次高素质技术技能人才方面面临着不少的困难和问题,其中实践教学在转型发展期应用技术型人才培养中具有至关重要的作用,因此必须采取多种对策加强实践教学建设,进行实践教学改革。

## 2. 机械电子工程专业实践教学现状及存在的主要问题

### 2.1 专业建设时间短,专业底蕴与基础相对薄弱

学校机械电子工程专业起步较晚,专业建设时间短,在发展历程、专业底蕴、学校师资、教学资源等方面均有相当程度的缺陷。

### 2.2 实践教学体系教条化,与专业联系不足,实践性不够

实践教学体系在一定程度上形式大于内容,没有达到锻炼学生实践动手能力、锤炼工程意识的教学目标。机械电子工程专业的实践教学体系在很大程度上借鉴与沿袭了学校原有机械设计制造及其自动化专业和过程装备与控制工程专业的模式,未突出机械电子工程专业的特点,与专业联系不足,实践性不够,未能很好地满足应用型人才的需要。

### 2.3 师资队伍缺少实践经验,系统性不足

教师专业理论知识较为扎实但实践应用能力相对薄弱,理论研究水平较高但研究开发水平较低,普遍存在重理论、轻实践的问题。教师队伍中以专任教师为主,其中具有行业背景或工程背景的教师数量明显不足,来自企业或行业具有丰富实践经验的兼职教师所占比例极小<sup>[3]</sup>。另外学校机械电子工程专业的专任教师中青年教师比例偏高,大多是应届毕业生后直接走上教师岗位,教学经验与实践经验都比较少。

### 2.4 校企合作流于表面,深度与广度不够

校企合作长效机制尚未真正建立,产学研合作层次和社会服务能力偏低。

## 3. 实践教学改革的具体措施

### 3.1 实践环节的设置

实践环节是激发学生专业学习兴趣、促进学生将知识转化为专业能力所必不可少的教学环节<sup>[4]</sup>。必须系统、整体地设置实践环节,使学生能够通过系统的技能训练,增强动手能力。机械电子工程专业实践环节由实验教学、课程设计、实训、认识实习、生产实习、毕业实习及毕业设计等构成。

#### 3.1.1 实验实训环节

实验与实训的内容安排要注重实效性、趣味性与创新性,注重理论联系实践,要贴近工程实际。要根据理论教学的进度合理安排实验环节的时间,在教学过程中,将基础性验证实

验穿插于理论课程中，便于学生通过实验验证所学理论，加深对所学知识的理解；另外，根据专业培养目标要求，以项目教学的形式开设了金工实训、电工电子实训等综合性实践项目。

### 3.1.2 设计环节

设计环节包括课程设计与毕业设计。课程设计的安排要体现真实性与系统性，既要结合课程的实际情况，又要与生产实践相联系，还要注意课程之间的交叉应用。毕业设计是对大学所学专业知识的综合运用，其选题要兼顾系统性与实用性。考虑到学生在最后一学期要花费大量时间精力求职，因此毕业设计的时间安排要合理，可在大四上学期一开学就进行毕业设计的开题，可使学生有相对充分的时间去有针对性地学习与复习相关专业知识。同时可选聘部分具有实践经验的校外教师与校内教师共同担任学生毕业设计的指导教师。

### 3.1.3 实习环节

与设计环节一样，实习过程是全面锤炼学生工程意识的必要环节，采用专业教育-认识实习-生产实习-毕业实习的由浅入深、由专业了解到专业精通的实习过程。教师认真制定每次实习的实习计划，确保学生能够在实习地点按照实习计划获得本专业方面的生产实践知识，充分了解企业生产状况及行业最新动态，为毕业后走向工作岗位积累有用的经验。

### 3.1.4 理论教学环节

理论教学为实践服务，理论课程建设与专业挂钩，向实际应用倾斜。例如专业英语课程，是纯理论课程，无实践环节，可在侧重于科技文献的翻译及科技词汇的学习的传统教学内容之外，增加该课程的实际应用能力训练，如让学生用英文进行专业技术交流会、招聘会场景的设计与模拟、求职简历或机电产品说明书的写作等。

## 3.2 实验室与实训基地建设

加大实验室与实训基地建设力度，为校内实验实训环节提供充足的场所与设备。自学校搬到新校区以后，工程训练中心面积由原来的约300平增至约4000平，在原有设备基础上增加了数控加工中心、数控车床、数控铣床、普通车床、铣床、磨床、钻床，增加了焊接工位等，可保证同时容纳两个班级100人次的校内实习实训。另有机械制造工艺实验室、电工实验室、力学实验室、先进制造技术实验室、机械控制工程基础实验室、材料工程实验室、自动控制实验室、公差与测量实验室、电子技术实验室、机械原理实验室、机械创新设计实验室、综合测试实验室等多个实验室。教研室积极申请中央财政与地方财政项目的专项基金，仅2015年度就成功申请了中央财政支持的共计370万专项基金用于实验室建设。

## 3.3 师资队伍建设

教师是高校办学目标、培养理念的最终践行者，如何从原来的侧重理论教学转向如今的“理论+技能”型成为转型教师专业发展最为迫切的话题<sup>[5]</sup>。要加强师资队伍建设，使教师不断丰富行业知识，积累实践经验，提高应用能力，适应学校转型发展对教师队伍的需要。

鼓励教师进修学习，教研室定期组织教师开展专业教学研讨，发挥教研室在教师提高教学质量，以及教师科研能力等方面能力培养的作用；积极引导专业教师尤其是青年教师加快自我发展，对青年教师实施导师制，采取以老带新方式，通过对青年教师实施“一对一”的导师指导制度，不断提高青年教师的教学水平和科研能力；聘请有丰富实践经验的行业优秀人才“走进来”担任兼职教师，同时制定相应政策，鼓励与组织教师尤其是青年教师“走出去”到生产一线去锻炼，使教师不断提高专业技术水平，提升教师实践教学能力，真正建立起一支实践能力强、教学水平高、数量充沛、结构优化、专兼结合的“双师型”教师队伍。

## 3.4 学生实践能力培养

在正常实践教学环节之外，以学科竞赛为推手，指导学生参加各种比赛，培养学生的竞争意识与实践动手能力，如积极组织学生参加大学生工程训练综合能力竞赛、全国信息技术应用水平大赛、大学生创业计划大赛、“互联网+”大学生创新创业大赛等比赛。同时鼓励学

生参与教师申报的课题项目，使学生所学知识通过实际项目得到拓展与提升，加强学生创新能力的培养。

### 3.5 加强校企合作

校企合作的基本内涵是产学研合作，目标是提高学生的综合素质，适应市场经济发展对人才素质的需要<sup>[6]</sup>。地方本科院校与企业的合作是一个互利双赢的过程，要实现与企业的长期合作，学校必须强化主体意识，主动融入，热情沟通，实现双方的利益最大化<sup>[7]</sup>。可借鉴其他地方院校或本校其他专业的成功经验，考虑为企业定向培养或与企业合作办学的模式，在人才培养过程中引进更多的企业元素，根据企业用人需要灵活调整专业设置和教学计划，构建开放式人才培养模式。切实构建产学研合作平台，实行校企共赢发展战略。

## 4. 结束语

对机械电子工程专业进行实践教学改革，要根据社会对专业人才的需求及专业发展规律，结合学生自身特点，不断创新教学模式，探索人才培养的有效途径；同时，还要将现有教学管理运行机制与“校企合作”的支撑条件等方面进一步配合，为学生搭建实践教学平台，建立各种与就业对接的服务体系，全面提高机械电子工程专业学生的社会适应性和就业竞争力，培养出满足社会需求的“量身定制”的应用型、复合型、技能型机械电子工程专业人才，真正满足社会发展的需要，更快、更好地推动学校的转型发展。

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## Research on the Construction of Navigation Professional Information Inquiry System Based on Media Platform

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**Keywords:** Information technology; Navigation technology; Media platform.

**Abstract.** The campus informatization is the trend of the future development of school education, and mobile information service is the vanguard of this tide, WeChat as the most popular mobile information service products, has attracted great attention. At the same time, the internet teaching method has become the trend of reform in vocational colleges. From the practical, to the Career Academy Tianjin maritime college as an example, presents the design idea of the system of open information query platform based on WeChat public query system design, system design, training query from teaching makes corresponding discussions.

## 基于微信平台的航海技术专业信息化查询系统的建设研究

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**关键词:** 信息化; 航海技术; 微信平台

**中文摘要.** 校园信息化是未来学校教育的发展潮流, 而移动信息服务更是这股浪潮的排头兵, 微信作为当下最流行的移动信息服务产品, 受到了极大的关注。同时, 互联网+教育教学也作为高职院校的改革潮流正在稳步推进。笔者从实用角度出发, 以天津海运职业学院航海技术专业为例, 提出了基于微信公众平台的开放性信息化查询系统的设计思路, 从教学查询系统设计、实训查询系统设计等方面做出了相应的探讨。

### 1. 引言

随着国家对高等职业教育的重视和投入的增加, 各院校的招生规模和实训基地规模也不

断扩大，但与之不匹配的则是信息化建设上的相对滞后。这不但影响到了教学和实训管理的工作效率，也对学生的信息化学习方式造成了一定的限制。通过建设信息化查询系统，可有效解决此类问题。然而，目前国内高校开发出来的类似系统，多数都是构建在网站平台或专业化的电脑软件系统中，在实际应用中出现了很多不实用的情况。笔者以天津海运职业学院的航海技术专业为例，从教学和实训管理的应用实际需要出发，对基于微信平台的信息化查询系统的建设进行设计和分析。

## 2. 航海技术专业信息化查询系统的设计思路

信息技术的不断发展，使手机已成为当代人必不可少的通讯乃至生活必需工具，从某种程度上来说，手机也正逐渐取代电脑，成为最主要信息化沟通方式。随着我国手机用户的增长，移动手机通信软件也逐步成为大家日常必备的手机软件，而微信则作为这类软件的领头羊已经融入到人们的日常生活，有调查显示在中国在校大学生中，微信的使用率已达 89%以上。微信公众平台是腾讯公司在微信的基础上开发的新的交互式平台，个人或者组织都可以通过微信公众平台打造一个专属的交互方式。同时微信公众平台开放了 API 接口，任何机构都可以针对此接口开发并构建自己的第三方服务平台，实现微信与信息发布的无缝对接。因此，可利用微信公众平台作为信息查询与移动互联技术相结合的突破口，实现教学相关信息的微信查询。

### 2.1 依托微信平台，添置信息化标识，引导学生关注

创建官方微信或者各类教学微信平台，并通过微信平台设计编辑教学、实训相关的图文网页，生成相应二维码标识，印制在教学、实训区的各类门牌标识、实训设备标牌上或宣传展板中，使学生通过手机微信扫描，即可便捷查询各类教学或校园信息，并关注微信平台。

### 2.2 整合微信平台数据，建设手机微网站

整合本专业内各类官方微信或课程教学微信平台的图文信息网页，通过接入第三方接口，搭建本专业教学、实训的手机微网站，并在微信平台内设置各类查询关键字的自动回复信息，实现各类教学信息的微信智能查询。

## 3. 航海技术专业教学查询系统的设计

### 3.1 查询方式

随着各院校校园文化建设，现在很多高校都在每个教室门口添置了课程表公告牌，方便师生可更好地了解课程安排，进行教学及学习。而随着信息技术的发展，现在更多师生已经习惯了使用手机查询课表。因此，可在每个教室门口课程表公告牌上增添印制二维码，使学生除了可以在教室门口直接浏览到课表，还可用手机扫描二维码进入教学查询系统，查询到包括课表在内的更多内容。

### 3.2 查询内容

通过微信平台设置，可使学生在扫描二维码后跳转到学院或教学的微信平台，设置微信平台绑定学院教务系统后台后，学生可在微信平台中查询到自己班级课程表、教室课表、本学期调课安排以及期末考试成绩等更多教学信息。有开发条件的高校，还可以进一步开发基于微信平台服务号的课程微信签到系统，可使学生在微信中完成签到。通过教学查询系统的建设，一方面能够使学生便捷地查询到课表信息，另一方面也能够实现智能化的教学实时跟踪与管理。



## 4. 航海技术专业实训室查询系统的设计

### 4.1 查询方式

实训室查询系统可参照教学查询系统的查询方式，以微信平台为基础，全部办公室和实训室的门牌以及部分实训仪器设备标识进行信息化升级，并以此为基础对本专业的校园文化进行提升，可设计如下效果的实训室门牌：



在设计过程中，我们将充分考虑专业文化在校园建设中的普及，在不同的学科办公室和实训室的门牌上配合不同的与该学科相关的文化图案，例如上图所示“电航仪器实训室”门牌右下角，可设计电航仪器设备如陀螺罗经的图案，从而使学生看到门牌图案就基本了解了该实训室的主要设备。并在门牌左下角设置二维码，师生可通过手机扫描二维码直接访问进入实训室查询系统。

同时，在实训室内对每台实训设备制作信息化标牌，使学生扫描标识上二维码图案就可以连接进入实训室查询系统。

### 4.2 查询内容

(1) 扫描实训室信息化门牌二维码，可查询到该实训室的设备列表、实训项目、管理制度、负责教师及联系方式，还可以进一步通过连接访问各实训设备的更多信息连接。

(2) 扫描实训设备的信息化标牌二维码，可直接浏览到微信平台中关于该设备的名称、功能、操作步骤、考试要点以及部分实操视频、动画等学习资源。

(3) 扫描办公室信息化门牌二维码，可浏览到该办公室教师的简介、课程教学微信平台连接等资料，实现便捷查询和沟通。

## 5. 信息化查询系统的特点

### 5.1 加强新媒体思维在校园文化建设中的普及

通过基于微信平台的信息化查询系统的建设，一方面为学生提供了移动学习和查询的新方式，促进了学生对信息化移动学习的兴趣；另一方面也激发了教师信息化教学的新思维，提升了师生们的新媒体学习和互动的思维意识。

### 5.2 与课程教学微信平台进行融合互补

信息化查询系统通过连接和整合专业内的各类教学资源，全面各类教学微信平台、网站等各类功能进行融合，注重学生之间以及师生之间的互动，调动学生的学习热情，可将平时课堂上学生玩手机耽误学习变成学生用手机辅助学习。

### 5.3 突破时空限制，实现移动学习

充分开发微信平台的各种接口和功能，将其与航海技术专业的教学进行重新整合，突破时空限制，使学生能便捷地使用微信平台进行学习。

## 6. 结语

以微信为代表的移动互联网技术，不仅仅只会改变教学和查询的方式，它将改变教育生活的方方面面。随着移动互联技术的发展，人类已经正式的步入移动互联网时代。而微信作为移动端软件顺势发展，已成为移动互联技术的宠儿。而且微信不仅仅作为一种即时通信软件，它还为其它移动 APP 提供入口，不断扩大其与校园生活的接触面，可以预见在不久的将来随着第三方 APP 的丰富，微信将会有更加长足的发展。而微信与教育的融合也会更加宽阔和深入。也许在不久后，学生就可以通过微信选课、微信缴纳学费、微信评课、微信交作业。

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## Comparative Study on Speciality Competitiveness of Local University in Jilin Province

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**Keywords:** Local University; Speciality competitiveness; Comparative study.

**Abstract.** In view of speciality competitiveness, to compare the level of speciality in local university in Jilin province exist big gap among these local universities, general speciality competitiveness is weaker. The support of speciality base, the creativity of speciality group, employment of speciality talents and strength of development of the specialities are the main factors of influencing the competitiveness of speciality. The combination of special resources and social demand, special location and enterprises practices, development of speciality and social economy, introducing top talents and cultivation are the main methods of enhancing speciality competitiveness.

## 吉林省地方高校专业竞争力比较研究

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**关键词:** 地方高校; 专业竞争力; 比较研究

**中文摘要.** 从专业竞争力的角度, 比较吉林省地方高校专业水平, 发现吉林省地方高校专业水平之间存在较大差异, 专业竞争力整体较弱。专业基础支撑力、专业团队创新力、专业人才就业力和专业长期发展力是影响专业竞争力水平的主要因素。坚持特色资源与社会需求相结合、特殊地域与企业实践相结合、专业发展与社会经济相结合和高端人才引入与培养相结合, 是提升地方高校专业竞争力水平重要途径。

### 1. 地方高校专业竞争力内涵与特征

#### 1.1 地方高校专业竞争力内涵

竞争力是一个复杂而宽泛的概念, 是基于竞争环境下产生的一种能力, 竞争至少由两个或者两个以上的主体参与, 竞争的本质就是在资源稀缺条件下各自利益争夺的一切活动。竞争力是参与者双方或多方在争夺各自利益活动中表现出来的综合能力。从竞争主体看, 可以划分为若干个层次, 比如, 国家竞争力、产业竞争力、企业竞争力和个体竞争力等。从竞争

的领域看，是将竞争主体所参与的竞争内容归纳于不同的领域范畴，可以划分为无数种竞争力，比如，国家参与在军事领域就是军事竞争力，企业参与在品牌领域就是品牌竞争力等。按照这样的分析逻辑，地方高校专业竞争力就可以理解为竞争主体是地方高校，竞争领域是专业，所以，地方高校专业竞争力是两个或者多个地方高校参与的在专业水平上表现出来的一种综合能力。地方高校的专业竞争力是支撑高校整体实力的基础，当一个高校的专业竞争力提高以后，伴随着的必然是高校自身整体竞争力实力的提高，也是高校长期可持续发展的决定因素。

## 1.2 地方高校专业竞争力的构成

地方高校专业竞争力可分解为四个基本力量，可以概括为专业基础支撑力、专业团队创新力、专业人才就业力和专业长期发展力。专业基础支撑力是构成专业竞争力的基本要素，是专业竞争力形成的基础。主要包括专业的课程体系设置、专业教师队伍结构、专业教学基础设置配备、专业教学和科研的管理机制等。专业团队创新力是指创新主体在从事专业建设过程中，表现出来的整体能力，是创新素质、创新方法、创新精神等的综合体现。主要包括思想创新能力、技能创新能力和管理创新能力等。专业人才就业力是指本专业培养的学生在劳动力市场中获取符合自身愿望的工作的能力。主要包括基础能力、专业能力和个性能力等。专业长期发展力是指专业保持持续性竞争优势和可持续发展的能力。主要包括专业发展规划、专业资源整合和专业变革能力等。专业竞争力的构成要素之间是相互影响、相互制约又相互促进的关系，对于专业竞争力来讲，专业基础支撑力是前提、专业团队的创新能力保障、专业人才就业力是表现、专业长期发展力是目标。

## 1.3 地方高校专业竞争力特征

地方高校专业竞争力的特征主要表现为以下几个方面：第一，基础性。高校是专业发展的主体，也是一个资源集合体，资源的绝对数量往往是决定专业竞争力的关键，同时，资源的利用效率对专业竞争力的提高也起到重要作用。第二，适应性。专业人才培养的目的是适应市场需求，专业是否具有持续的竞争优势的衡量指标就是人才的需求的大小，一个专业培养人才处于短缺还是过剩状态，取决于专业人才能否跟上市场需求的变化，适应市场需求变化专业就持续发展，否则，就会被淘汰。第三，动态性。专业竞争力不是永远不变的，而是多维、动态、综合发展的过程，许多专业在一定时期成为了热门，逐渐也可以成为冷门。其中的原因就是形势变化，而专业内涵没有变化，专业没有动态发展，不适应社会需要。专业也要与时俱进的发展与重构，才能保证专业竞争优势的持续。

## 2. 吉林省地方高校专业竞争力评价

### 2.1 样本选择与评价标准

吉林省地方高等学校共有 57 所，包括普通本科、专科、职业技术教育各类学校。这些学校专业设置比较多，不同类型学校的综合实力和设置差距也比较大，导致了一些学校之间的专业不存在可比性。所以，在比较样本的选择中，为了更具有代表性，选择在吉林省处于相对优势的七所地方高等学校。即：长春理工大学、长春工业大学、东北电力大学、北华大学、吉林农业大学、吉林师范大学和吉林财经大学。

吉林省地方高等学校专业竞争力评价标准，参考武书连编写的《中国大学排行榜》的有关资料和结论，将吉林省七所高校的专业水平划分为 11 个等级，分别是 A<sup>++</sup>、A<sup>+</sup>、A、B<sup>+</sup>、B、C<sup>+</sup>、C、D<sup>+</sup>、D、E<sup>+</sup>、E。这 11 个等级说明 A<sup>++</sup>专业水平最高，而 E 专业水平最低。然后，对这 11 个等级进行打分，分值从 100—55 分，然后，计算每个学校专业的平均分，平均分的高低，决定学校专业水平的高低，表示竞争力水平高低。专业等级对应分值，如表 1 所示。

表1 专业等级划分及分值表

专业等级	分值	专业等级	分值	专业等级	分值	专业等级	分值
A <sup>++</sup>	100	B <sup>+</sup>	85	C	70	E <sup>+</sup>	55
A <sup>+</sup>	95	B	80	D <sup>+</sup>	65	E	50
A	90	C <sup>+</sup>	75	D	60		

## 2.2 专业竞争力定量评价

根据专业竞争力评价标准，对七所学校的所有专业进行等级划分，并统计出专业等级的个数，将对应的等级个数与对应的分值相乘，求出专业总得分，用专业的总得分除以专业个数，即可得到专业的平均得分，得分数值见表 2。

表2 七所学校专业平均得分表

学校名称	专业总数	专业等级数量											专业总分	专业平均分	专业竞争力排名
		A <sup>++</sup>	A <sup>+</sup>	A	B <sup>+</sup>	B	C <sup>+</sup>	C	D <sup>+</sup>	D	E <sup>+</sup>	E			
长春理工	43	0	0	1	6	6	1	4	2	3	9	11	2795	65	1
东北电力	36	0	0	0	0	1	5	6	7	2	5	10	2225	61.81	5
长春工大	48	0	0	0	0	2	3	5	5	8	16	9	2780	57.92	6
吉林师大	51	0	0	0	0	5	8	3	7	9	15	4	3240	63.53	3
吉林农大	53	0	0	0	1	8	2	3	8	5	17	9	3290	62.08	4
吉林财大	27	0	0	0	0	1	8	4	2	1	5	6	1725	63.89	2
北华大学	67	0	0	0	0	0	0	2	3	6	20	36	3595	53.66	7

## 2.3 专业竞争力比较

在表 2 中，分别对七所学校的专业计算了平均分。长春理工大学 43 个专业，专业平均分为 65 分，东北电力大学 36 个专业，专业平均分为 61.81 分，长春工业大学 48 个专业，专业平均分为 57.92 分，吉林师范大学 51 个专业，专业平均分为 63.53 分，吉林农业大学 53 个专业，专业平均分为 62.08 分，吉林财经大学 27 个专业，专业平均分为 63.89 分，北华大学 67 个专业，专业平均分为 53.66 分。从专业平均得分，可以说明，在吉林省地方高校中，专业竞争力的水平是长春理工大学最高，北华大学最低。吉林师范大学和吉林财经大学得分相

近,吉林农业大学与东北电力大学得分相近,说明这四所学校的专业竞争力水平也相差不大,长春工业大学与这四所学校相比,专业竞争力水平力略低。

## 2.4 研究结论

通过吉林省地方高校专业竞争力的比较分析可以发现,吉林省地方高校专业水平比较低,特别是在社会科学中的人文类专业的评分中,分数普遍低于全国的平均水平,大多数集中在55和50分中,而专业水平较高的只有极少数,达到80分和85分,达到90分以上的高水平专业数量是零。造成这一局面的主要原因有以下几个方面,制约了吉林省地方高校专业竞争力水平的提升。第一,专业特色不突出。专业特色是保持专业竞争力的重要内容,没有特色的专业注定在竞争力上是没有优势可言的。吉林省的许多地方高校专业特色不突出,导致了评分较低。进一步说明了吉林省地方高校在人才培养模式、目标及专业内容设置上,没有自身的突出特色,致使不同高校同一专业培养的人才差异性小。第二,专业基础能力较弱。吉林省地方高校的教育资源不足,缺少专业方向上的拔尖人才和优秀团队,尤其在社会科学专业中,表现的更加突出,严重影响了专业发展的水平的提高。第三,专业建设缺乏长远目标。许多学校在专业建设过程中,追求短期效益,忽视长远发展,在吉林省地方高校中也不乏国家级、省级特色专业,而这些专业基本是在申报过程中,被普遍重视,当申报成功后,往往就失去了持续发展的动力,形式上是高水平专业,而实际上仍然是低水平。

## 3.提高吉林省地方高校专业竞争力的建议

### 3.1 坚持特色资源与地方经济需求相结合

目前,地方高校的生存发展空间受到严重挤压,专业设置与重点大学相同,地方高校与重点大学相比,专业根本不可能有竞争力。地方高校的优势在于服务于地方经济建设,所以,地方高校要从实际出发,用好地方特色资源,把资源、专业和社会需要三者结合起来综合考虑。社会需要就是满足地方经济的需要,与地方人才需要相联系,不断调整专业的方向和专业的学习内容,保证专业的发展与地方经济发展相适应。

### 3.2 坚持特殊地域与企业实践相结合

特殊地域为专业竞争力的形成创造了先天的条件,特殊地域的高校要与企业一起共同建立和培育专业能力。学校要把自己专业培养的学生与企业实践结合起来,企业成为学生的实践教学基地,在企业内进行技能、技术培养,使他们更早获得企业的实践能力,缩短学生适应工作环境时间。

### 3.3 坚持专业发展与社会经济相结合

专业建设不仅要求有序化,更需要科学化,涉及到不同的方面或层面,只有与时俱进,才能长改常新,适应科技、社会发展的需要。学校专业的培育要围绕地方经济发展、产业结构的调整和社会经济的全面发展的战略定位,准确地定位面向地方经济发展的专业设置目标上,积极完成专业的改造和变化以适应地方经济的发展。围绕产业结构的调整、升级,优化自己的学科、专业和人才培养特色。突出重点,抓住关键,全面规划学科专业结构,吸引更多的支持和资源来改善学科结构,提高教学水平和能力。

### 3.4 坚持高端人才引入与培养相结合

高端人才是专业竞争力形成的关键,有了高端人才,就等于有了专业竞争力。对于地方高校来讲,高端人才的获得是十分困难的,应该坚持高端人才引入与培养相结合。在高端人才引入上,不一定拥有,也可以合作、协作或者共享等方式引入,同时,要有配套的措施保障高端人才的生活、科研和教学的要求。高端人才培养是一个漫长的过程,要注重送出去,

也要注重请进来，地方高校要与重点高校进行积极合作，全面提高专业教师能力的同时，对于拔尖人才进行重点培养，形成一支高水平的专业创新团队。

## 致谢

本文为吉林省教育科学规划课题一般项目，《吉林省地方高校专业核心竞争力评价与培育对策研究》(GH13163)的阶段性成果之一。

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## The Reason of the Change in Revolution Drama Narrative Style

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**Keywords:** Revolution; TV series; Narrative; Reason.

**Abstract.** Our society is in from political culture form to the market culture form, from planned economy to market economy, the transition from agricultural civilization to commercial civilization. A series of value criterion, moral sense, the life pointing have great changed. As an important manifestation of the mainstream culture revolution dramas, It is not surprising as well as evolution occurred during the spring tide of market economy. The change of it is the progress of social development, the maturity of television art performance. It is necessary to study of the causes of their evolution, and is of positive significance to the development of the future.

## 试析革命史题材电视剧叙事风格嬗变的原因

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**关键词:** 革命史; 电视剧; 叙事; 原因

**中文摘要.** 我国社会正处于从政治文化型向市场文化型、从计划经济向市场经济、从农业文明向商业文明的转型期, 一系列价值规范、道德意义、生命指向都发生了重大变化。作为主流文化重要表现形式的革命史题材电视剧, 在市场经济的大潮中发生嬗变也就不足为奇了。它的变化是社会发展的进步, 是电视艺术走向成熟的表现。研究其嬗变的原因, 是必要的, 对其今后的发展有着积极的意义。

### 1. 客观原因

革命史题材电视剧, 属于主旋律题材的作品。其叙事风格发生变化有其客观原因, 与社会主义现代化建设的深入, 社会文化的变迁, 时代、民族的不同, 以及市场经济的作用分不开的。



## 1.1 社会文化的变迁

随着我国改革开放的不断深化，市场经济的发展，我国的文化事业也在不断的发生着变化。20世纪80年代到来的时候，中国刚刚从十年“文革”中解放出来，这是一个变化和转型的时期。主流文化和精英文化是这时中国社会文化非常重要的组成部分。最鲜明的表现，体现在80年代的电视剧上，这一时期电视剧的拍摄很大程度上是一种政府行为，而非市场行为。电视剧拍摄的目的按照这时的语言来说，首先是“满足人们的精神文化的需要”，而不是为了电视媒介的发展，更不是为了积累资金，获得利润。电视剧首先担负起的是社会责任，对社会负责。作为精英阶层的知识分子责无旁贷地肩负起这一历史责任。这样一种文化现象的出现是和当时的社会文化环境息息相关的，是当时特定的社会文化造就了这样的电视文化。

到了90年代，“发展才是硬道理”成为中国发展的主要基调。社会文化发生了变化，电视文化的内涵也随之发生了根本的改变，形成了自己的特点。“文人电视”在中国一去不复返，而“商人电视”、“报人电视”等登上历史舞台，作为大众文化的电视获得了空前规模的繁荣，以其特有的形式和魅力被中国最广大的观众所喜爱。电视文化在中国的勃兴意味着中国文化人的思想观念的一个巨大转变，由居高临下地引导大众到迎合大众、为大众服务，而所有的这一切，与市场经济、商品逻辑的作用分不开的。

新世纪以来，随着中国社会结构的变化，电视观众因其社会地位、教育程度、收入等原因，对信息需求和审美情趣有了不同，分层日益明显。同时，电视机构商业体制的完善和深入，以传者为中心的理念向以受众为中心的理念的转变，针对不同社会群体制作不同电视剧类型成为电视文化发展的主流方向，并影响着社会文化的变化。

因此，我们可以把电视文化看成社会文化的一面镜子，理想的电视文化与社会文化的关系是相互的：一是客观的，社会文化什么样，电视文化也就表现出应有的电视的景观，所以，只要社会文化发生了变化，电视文化也就应当出现相应的变化。从这个意义上说，对于近年来革命史题材电视剧发生的一系列嬗变也就不足为奇了。二是电视文化的超前性，即电视文化所表现的是社会文化应该有的样子，是人们的理想和奋斗方向。电视不仅仅要告诉人们这个世界是什么样子，而且还要告诉他们这个世界应该是什么样子，于是，电视文化对于社会文化就形成了一种感召作用，这才造就了像《激情燃烧的岁月》、《亮剑》、《历史的天空》这些反映我国革命军人生存状态和精神的革命史题材电视剧的收视奇迹。

## 1.2 时代、民族需求的转变

每一个观众都生活在一定的时代和社会之中，而每一时代和社会都有自己占主导地位的时代思想和审美情趣，这些时代思潮和审美趣味对任何观众都会产生不同程度的影响，影响着他对一部作品的接受和评判。

影视欣赏心理因时代不同而迥异，时代的嬗变可以引起欣赏习惯的变异，社会历史条件的变化会引起欣赏心理的变化。不同时代有不同的审美理想，这种审美理想主宰着时代的审美情趣和风尚，决定着人们对影视作品的欣赏心理倾向。

我国的“文革”时期，风行一时的“样板戏”，培养了那个时代观众喜欢高大全主人公、善恶分明的矛盾冲突、好人一切皆坏人一切皆坏、善有善报恶有恶报的传统思想观念。而随着改革开放的深入和全球文化一体化格局的逐步形成，人们的思想观念和审美趣味都发生了很大的变化，观众不再满足于作品中只有泾渭分明的好人和坏人，而是要看到复杂的人性，他们希望影视作品中的角色像生活中每一个活生生的人一样，既有优点，也有缺点；他们不只要求看到“扁型人物”，更要求看到“圆型人物”甚至“心态型人物”；不再满足于简单的矛盾冲突和大团圆结局，而是要看到生活本身的复杂性和艰难性；不再满足于简单的说教，而是要求作品表现更深刻的历史理性和人文关怀。近些年来，随着时代的发展和进步，革命史题材电视剧创作的叙事风格及审美趋向都发生了明显的变化，在演绎历史的同时，艺术表现上，更能满足现时代人们的审美要求。

不同的民族，有其不同的历史经历、生活方式以及思维定势等，进而形成了各自风格迥异的审美习惯和审美价值取向。有人说，电视是一个国家和民族的“私生活”，在反映“私生活”的电视文化中也最能表现一个国家、民族的大众行为与思维模式、审美趣味及欣赏习惯等等。作为特定民族的社会生活和特定社会意识形态的反映，影视作品中确实充满着随着文化全球化时代的到来，各个民族和国家的文化正在日益融合，各民族和国家的观众也都在渴望看到自己民族之外的“外面的世界”。随着中国改革开放的深入，随着中国在国际社会的经济地位和政治地位的不断提高，渴望了解博大精深、源远流长的传统中国文化的西方观众越来越多，西方观众也越来越为中国古老的文化和文明所折服。我们的影视创作者应该以此为契机，让中国的文化和中国的影视作品走向世界。革命史题材电视剧在表现民族历史和民族精神方面有着独特的长处和优势，通过此种题材，将我们国家和民族的历史、发展和变化告知世界，让世界了解中国。

### 1.3 市场规律的支配

在中国，从20世纪80年代开始，电视剧的生产资金便越来越多的来自于社会、企业，来自于越来越多的非电视台机构。政府对电视剧生产的直接控制减小了，但这并不意味着中国的电视剧生产是一种自由产业。事实上，迄今为止，传媒体系仍是隶属于国家政府的重要的文化机构建制。而履行经典的意识形态工具的职责与在激烈竞争之中追逐并保持市场份额与利润，是传媒文化市场必须扮演的双重角色。一方面是社会责任，一方面是市场份额。在两者的权衡之下，文化生产与经济利润的双赢，成为各生产者的强烈欲求。

早期的电视剧生产，主要是政府拨款，不必考虑资金来源。因此，电视剧创作凸显出强烈的国家意识，是一种宣传色彩极其浓厚的电视文化。它们只要忠实、准确地传递政府的声音就可以了，这类电视剧多是作为宣传品，不太考虑市场回报。20世纪90年代后期，商业投资成为电视剧生产的主要资金来源。电视剧制作方从银行或者企业那里获得商业投资，待电视剧发行后再提供经济回报。这种生产方式就决定了电视剧首先是以商品形式出现在市场经济体制之下，利润的回收是保证电视剧再生产的前提。高利润同时代表着高收视率，高收视率也同样代表着受欢迎程度。

革命史题材电视剧作为中国电视剧生产中的重要组成部分，如何保证和提高它的收视率成为电视剧制作方必须考虑的问题。于是，收视率的高低成为一部电视剧乃至一个电视机构生死攸关的要素。在这样的背景下，中国的电视机构越来越重视观众的需要，以观众的收视兴趣为根本导向，这就决定了革命史题材电视剧必须在创作等方面要有新的改变。

国家的政治主导、市场的经济支配和大众的文化心态，决定了电视剧的生产者在表述对社会、人生和现实的批判和认识时，必须多方面考虑。因此，革命史题材电视剧的嬗变，既顺应了时代的文化思潮、观众的收视需求，也是市场规律支配的结果。

## 2. 主观原因

每个人作为一个个体，不论是审美心理还是审美标准都是各不相同的，但是他们对于某类艺术作品却往往有着相同或相近的偏好。共同美的客观存在，是电视剧作为大众的艺术赢得观众的心理基础和前提。对观众审美心理变化的原因进行分析，有利于我们创作出优秀的革命史题材电视剧。

### 2.1 潜心理意识的转变

新中国电影不以娱乐为目的，但对于文化生活十分贫乏的中国人，看电影仍然是最主要的消闲方式。由于实际生活中政治运动此起彼伏，政治因素渗透进社会的每一个角落，对于充斥银幕的政治内容，观众也已习以为常、安之若素了。而且，由于不断受到浸染，人们养

成了观影习惯：一种负载着强烈政治色彩的身心愉悦，将看电影视为另一种体验政治激情的活动，并自觉的认同其政治内涵，认作另一个思想教育的课堂。

在政治氛围浓厚的创作环境下，电影“泛政治化”了，所有的一切几乎都围绕在政治意图之下，但是随着社会的变革和现代信息技术的突飞猛进，人们的工作和生活节奏明显加快，来自工作、学习、家庭等方面的压力增加，经过一天的紧张工作和学习，回到家里，坐到电视机前，人们希望在紧张的工作压力之下，能找到一种释放压力、缓解焦虑情绪、宣泄内心情感的方式，要求轻松、娱乐的心理自然形成，并且观众长期以来一直扮演的被动接受角色的情况已有改变，人们对于娱乐的要求空前高涨，而后现代主义思潮和消费社会的理念也适时地进入了人们的生活，所以一些轻松活泼、饶有趣味的电视节目备受观众喜爱。世俗的情感，人的七情六欲、喜怒哀乐、爱恨情仇，这些就成为电视剧永恒的主题。考虑到受众的需求及审美心理，以大众的姿态、通俗的方式走近人们，多一点人文精神，少一些高深玄妙，是电视剧观众的呼声。

在这种情况下，广大观众往往在潜心理意识变化的支配下，去选择与自己生活相近，自己熟悉并感到亲切的作品观看，期待电视剧中更多地出现与自己生活、学习、事业更贴近的东西，期待看到自己所处时代的社会背景下人们的情感变迁与追求，期待看到对自己曾经经历过的时代的真实再现和反思，以便从剧中人物类似的经历中，探索和解释自己的一些疑惑，使现实生活中解决不了的种种矛盾，在艺术作品中得到虚幻性解决，引起内心的共鸣。

近些年来，革命史题材电视剧迅速走红，正是适应了广大观众潜心理意识转变的结果，满足了广大观众的口味，它的创作必须顺应社会的发展和观众的审美情趣。就革命史题材电视剧的思想价值而言，无论是以人带事的文本，还是以事带人的文本，它们大多通过对典型人物与典型环境、历史观与生命观、历史事件与人物个性、史与诗的特殊理解和处理，把视野引向今天我们直接传承的那段创世纪的辉煌历史和记忆中那些创世纪的人们。尤其是其中所张扬的爱国主义、革命英雄主义、奋斗意志和奉献精神等，它们是我们民族精神的凝聚与闪光。

## 2.2 审美期待的满足

接受美学的代表人物尧斯在他的《文学史作为向文学理论的挑战》一文中指出，艺术接受是整个艺术创作过程的有机组成部分和不可或缺的环节，因为读者才是文本意义的生成者和文本价值的实现者。任何读者在阅读文学作品前，心理都并非一张白纸，而是已经具有某种倾向性、审美要求和审美标准，这些又都是同读者既有的审美经验、艺术素养和思想观念密切相关的，尧斯将其定义为“期待视界”，在具体阅读中，它表现为一种潜在的审美期待。电视剧审美与文学作品的阅读过程不能等同，但“期待视界”所描述的其实是一切艺术共通的审美心理特征，所以也一样存在于电视剧的审美接受活动之中。同文学阅读一样，在电视剧的审美接受活动开始之前，任何观众也都有自己特定的“期待视界”，它由观众既有的经验构成，以艺术审美经验为主，同时还包含了社会、人生经验，共同构成一种审美心理的先在结构和思维定势，作用于电视剧审美接受的全过程。期待视界决定了观众对电视剧的取舍标准，也就是说决定了他对电视剧的选择，“看是有目的的。我们之所以看，是因为我们想要看什么的设想和期待指引的。而这些，又是建立在我们对艺术作品或现实世界的既有经验上的。”既有的经验是影响观众选择的决定性因素。面对不同频道同时播映的众多电视剧，是选择看言情的、武打的还是革命史的？这种欣赏前的意向，即使是那些看似无意的选择和取舍，其实都是观众对接受对象的“前理解”决定的。

每年在电视荧屏上播映的电视剧数千集，但哪些作品能够真正成为具有“历史生命”的作品，无疑取决于观众的期待视界。观众的期待视界决定了他对电视剧作品的需要、兴趣和选择。所以，一部电视剧作品能否产生审美效用，决定性的因素是每一个审美个体的观众，是观众的期待视界。

在上世纪60、70年代的“文革”动乱期间，中国人曾经为了共同的“信仰”而轰轰烈烈、义无反顾，结果换来的却是幻想破灭后的失落以及留给后人难以理解的笑柄。因而当80年代改革开放开始后，人们失衡的心态中迫切需要一些真真切切的精神支柱，期待那些脱去金色光环的平凡而质朴的英雄。到了20世纪90年代的后半期，一些革命史题材电视剧开始走红，《长征》、《日出东方》、《八路军》受到观众的欢迎。从某种程度上说明，革命英雄进入现今时代是观众所期待的，也在某种程度上折射出现实生活中的某种缺失：在社会转型时期，诸如超凡能力、献身精神、完美品行、纯真心灵和近年来社会上大面积出现的道德沦丧、灵魂堕落、信仰弃置、价值失范形成了鲜明的对照。这使现代人感到苦闷、失落、迷茫，但失落绝不代表堕落、迷茫也绝不代表沉沦。不管学者们如何感慨时代的疾病，人们依旧渴求着理想、追求和被救赎。而大众传媒便成了他们有效的寻找途径。在这种意义上，对英雄主义的呼唤和对精神危机的隐忧在同一个层面表达出人们在新的历史时期对重建精神道德资源的价值诉求。

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## An Exploration of Money and Banking Based on the Practice of Linyi University International Trade Teaching

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**Keywords:** Money and Banking; Content of course; Timeliness; Linyi University

**Abstract.** Money and Banking is one of the core courses of international trade in Linyi University. It is an enlightenment course that guides students into financial field. In the process of teaching, we found the traditional teaching of money and banking has many problems, for example, the content selection order is unreasonable, and the content includes too much macro or domestic issues. With the actual needs of Linyi university students, we attempt to remodel the curriculum content and highlighted the micro and international sections. The optimization achieved good effect in class.

### 《货币银行学》教学内容的探索与实践——基于临沂大学国际经济与贸易专业教学

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**关键词:** 货币银行学; 教学内容; 时效性; 临沂大学

**中文摘要.**《货币银行学》是临沂大学国际经济与贸易专业的核心课程之一, 是引导学生进入金融学殿堂的启蒙课程。在临沂大学货币银行学教学过程中, 我们发现: 传统的货币银行学的教学在内容选取与课程结构存在顺序不合理及偏重“宏观”和“国内”等问题。结合临沂大学学生的实际需要, 对课程内容进行清理和重构并突出了“微观”和“国际性”等有益尝试, 这些优化在教学过程中取得良好的教学效果。

#### 1. 引言

金融是现代经济的核心, 货币银行是金融的基础。《货币银行学》是教育部确定的十一门“财经类专业核心课程”和“面向21世纪经济、管理类核心课程”之一, 是一门研究金融领域各要素及其基本关系与运行规律的专业基础理论课程。作为培养和提供国际经贸专门人

才的国际经济与贸易（以下简称国贸）专业，其专业性并不像理工科那样明显，学生未来所面临的竞争压力更大，对创新应用能力的要求也更高。在国贸专业中，一般院校都把《货币银行学》设定为必修课，作为一门应用理论课，不仅具有较强的理论性，还具有一定的应用实践性。随着社会经济形势的变化，《货币银行学》的理论与实践内容呈现出不断变化性特征。因此，在临沂大学强力推进“红色育人”和“国际视野培育”两大全员育人、全程育人、全方位育人工程，致力于培养“具有沂蒙精神特质和国际视野的高素质应用型人才”的培养目标下，如何让国贸专业的《货币银行学》课程适应这新的培养目标的要求，提升国贸专业学生的金融学素质和金融操作能力，就成为目前货币银行学教学面临的课题，在授课时数较少的情况下，要结合学生专业特点，不仅要讲货币银行领域的基本理论、基本知识讲解清楚，更要关注国内外金融理论与政策的更新与变革，要与时俱进，不断地进行教学内容的改革与更新，调整教学体系和教学重点。

## 2. 传统的货币银行学教学内容

临沂大学国贸专业从2002年开始开设货币银行学课程，曾选用黄达主编的《货币银行学》、戴国强主编的《货币银行学》、胡庆康主编的《现代货币银行学教程》等作为教材，但货币银行学教学内容没有太大变化，一般包括以下几个方面的内容（见表1）。

表1 传统的货币银行学的教学内容

教学内容	包括的具体内容
货币概述	货币职能、货币制度
信用和利率	信用、信用工具、利息和利率
金融市场	货币市场、资本市场
金融机构	商业银行、中央银行
货币理论与货币政策	货币需求、货币供给、通货膨胀及紧缩、货币政策
金融发展	金融深化、金融创新

资料来源：根据黄达主编的《货币银行学》、胡庆康主编的《现代货币银行学教程》整理

国贸专业的《货币银行学》教学重点就是完整阐述以上内容中的基本概念和基本原理，银行、信用、货币及货币供求关系、金融政策对国际贸易活动的影响等的金融分析。

## 3. 传统的货币银行学教学内容存在的问题

根据国贸专业培养目标，对国贸专业学生教学内容应该更广一些，深度低一些。但在教学实践中出现了以下问题：

### 3.1 内容选取和结构顺序编排不合理

(1) 教学内容与西方经济学（宏观经济学）的教学内容重复过多。如通货膨胀、货币理论、货币政策等内容与宏观经济学中的重复较多。(2) 传统内容所占比重过大。比如货币与货币制度、信用等内容所占篇幅过大，而当前外国国贸专业的同类课程一般不涉及这方面的内容。(3) 金融学的现代理论内容缺乏。传统的货币银行学货币部分缺失现代新型货币的介绍；利率理论部分忽视了利率的结构；在金融机构部分缺乏现代金融中介基本理论分析，也缺乏对一些重要的非银行金融机构基本运行的分析；金融市场部分缺乏资产定价基础和选择行为理论；缺少金融危机的最新介绍等。(4) 教学内容顺序和结构不太合理。在利率部分，国外一般要介绍金融机构和市场体系以后才学习，因为利率本身是金融市场的价格行为，而我国多数课本中颠倒了这两部分内容的顺序。另外，对货币创造和货币供给等高度关联的内容，仍按照教材顺序在金融中介和宏观均衡中分别讲授。教学内容选取和编排不合理，既不能为学生搭建清晰的理论框架，又浪费了宝贵的授课时间。

### 3.2 偏重“宏观”和“国内”，忽略“微观”和“国际”

以往国贸专业的《货币银行学》教学内容中，微观金融分析主要包括对商业银行、中央银行等金融机构的研究及货币市场、资本市场等金融市场的研究，宏观金融分析主要包括货币需求与货币供给理论、货币均衡、通货膨胀及紧缩、货币政策等内容。但在教学过程中，主要讲述宏观金融，微观金融分析相对较少，特别值得注意的是，微观知识一直以间接融资的介绍为主，对直接融资的介绍相对不足。

在教学的过程中，货币银行学的教学内容除了忽略“微观”外，还忽略了“国际”。国际金融理论与实务部分主要包括国际收支、外汇与汇率、国际金融机构与国际金融市场等。对国贸专业而言，在后续课程《国际金融》中会重点介绍此部分，所以，国贸专业的《货币银行学》教学重点放在了“国内”。在教学过程中主要以讲授“国内”为主，涉及“国际”内容几乎不讲。

## 4. 临沂大学货币银行学教学内容改革初探

临沂大学一直非常重视课程建设和课程改革，曾把2006年确定为“课程建设年”，把课程建设作为全面提高教学质量的一个突破口，放在重中之重的位置上。在临沂大学一系列政策措施的支撑下，《货币银行学》教学内容进行了改革，针对具有国际视野的应用型人才培养的国贸专业的特点，合理制定教学内容和重点。教学内容一要随实践做出调整，二要随理论发展做出调整，剔除传统过时的内容，不断吸收现代经济理论发展的新成果，以保证其时效性。

### 4.1 课程内容的清理与重构

从2003年开始，临沂大学发起“课程清理与重构”活动，要求按照人才培养需求和社会发展需要，改革课程内容，本着“多门数少课时”的原则，精简教学内容，重构合理高效的教学内容体系，改变“教师讲废话，学生读旧书”的现象。根据学校要求，货币银行学课程内容进行更新。

(1) 增加新知识。当前经济发展中变化最快的部分莫过于金融系统，这导致现有《货币银行学》教材虽经多次修订和再版但其中许多内容仍与现实不符，因此，在该门课程的教学过程中，授课教师根据形势的变化，及时调整教学体系和教学内容，密切联系实际，补充新知识，特别注重对热点问题进行分析和讲解。如在货币形式发展部分，要增加“电子货币”的内容；在货币制度部分，要增加“非主权国家货币制度”的介绍；在信用形式部分，结合我国现阶段发展住房贷款的发展态势，加大介绍“消费信用形式及其作用”；在商业银行部分，加入商业银行改革方面的知识介绍，特别是加大介绍我国以工、农、中、建四大国有行股份制改革为代表的商业银行深化改革的内容，以及电子银行、网络银行、手机银行等现代化发展等内容。在利率传导机制部分，结合我国中央银行的调息问题，解释中央银行调整利息的背景、原因、作用机制、可预期到的影响等等，这样在时事热点问题的阐述过程中现出利率、货币政策调控、中央银行职能等深奥的金融学原理。

此外，增加一些现代金融理论的新发展。如金融市场部分：一是结合美国次贷危机等案例增加金融衍生工具市场的介绍，使学生对金融衍生工具有更为具体的认识，二是增加外汇市场的介绍，以了解汇率和外汇市场的运行与操作。金融机构部分：一是增加金融中介理论介绍，特别是对金融中介的制度安排进行制度经济学分析，二是增加对非银行金融机构的介绍，特别是对证券公司、投资基金、信托机构、养老基金、储蓄机构与信用合作机构等非银行金融机构的功能定位和基本业务的介绍，这一部分是目前的教学中普遍缺少的。金融价格部分，要增加利率结构、证券资产定价、资产选择行为等内容的教学。证券定价和汇率决定，是金融学的核心内容。从国外的教材来看，这是教学的重点也是难点，要特别予以强调。鉴于金融危机对我国经济的影响，还要增加金融危机理论的介绍。

(2) 删减部分内容。一是删减与西方经济学中重复的内容,比如通货膨胀、货币理论、货币政策、均衡利率的决定及作用等内容与西方经济学中的重复较多,予以适当删减。二是删减传统内容,比如货币的起源、发展和传统货币制度及信用对于临沂大学国贸专业来说则完全删除,因为对于国贸专业学生而言,主要是了解各种金融市场和各种金融机构的作用、行为以及金融投资的基本原理,而信用的章节和金融市场部分内容重复。商业银行部分则删除了商业银行的产生和发展,教学内容集中在商业银行业务和功能定位上。

(3) 调整教学顺序和结构。比如,利率本身是金融市场的价格行为,在国外教材中一般要先介绍金融机构和金融市场以后才学习利率部分,而我国多数课本中这两部分内容在顺序上颠倒了,在临沂大学国贸专业的实际教学中进行了调整,使教学内容在结构上更有层次性和逻辑性。

## 4.2 教学内容突出“微观”

临沂大学国贸专业的《货币银行学》教学在完整介绍金融学基础原理的基础上,以微观为主,即主要以银行为主的金融机构、金融工具、货币市场和资本市场等内容为主。因为:(1)这与国贸专业培养目标强调应用性匹配。国贸专业的毕业生有相当一部分去外贸企业工作,企业的微观性强调学生要理论联系实际、具备较强的实际应用能力,这就要求学生在掌握金融基本知识外,要深化微观知识的掌握与应用。(2)这与金融学的发展配合。当前在金融领域的研究中,强调的主要是微观金融理论。伴随这一趋势,《货币银行学》教学也应以微观为主。例如区别认识各国的货币制度、利率发挥作用的渠道、商业银行运作的过程、金融危机爆发的原因、过程、表现等等,都是与企业工作息息相关的内容。教师在给学生讲授《货币银行学》知识的时候将侧重点向这些方面倾斜。特别值得注意的是,在以往国贸专业《货币银行学》的教学中,微观知识一直以间接融资的介绍为主,对直接融资的介绍很少,这与我国企业长期以来依赖银行信用的现实情况有很大关系。然而,当前直接融资正在发展成为企业一条非常重要的融资渠道,考虑到这一现实情况,为了提高国贸专业毕业生在企业工作的创新应用能力,就非常有必要增加讲授直接融资内容的分量,特别是对资本市场的运作、资本市场常用金融工具、利用金融衍生工具规避企业外汇风险等知识的介绍。

## 4.3 教学内容突出“国际”

随着临沂大学国际化办学的需要,学校出台政策,进行国际化课程建设,要求各院系各专业必须学习和借鉴国外知名大学优秀的课程资源,并积极引进。既要引进国外课程资源,更要引进国外课程理念,以开拓办学视野,为学生提供更优质的课程。同时也启动了单门植入课程的建设工作,并于2008年全面实施。同时也进行了国际化人才培养方案的制定,对国际化人才培养方案进行了多个层面的论证。

在学校致力于培养“具有沂蒙精神特质和国际视野的高素质应用型人才”的培养目标下,货币银行学课程在教学内容上尽可能地做到反映国际上金融学理论与实践的最新发展,使之与国际先进水平接轨。对国贸专业而言,国际金融理论与实务部分要求较高。虽然后续开设《国际金融》课程,会对该部分作详细和深入的介绍,但在《货币银行学》课堂,这部分内容仍然是一个侧重点,特别是关于外汇与汇率、外汇市场、外汇交易等内容,不能轻易不讲。教学中,将国内和国际结合起来,对比分析,对于涉及国际的内容由于受授课时数所限,以补充知识或扩展阅读的形式让学生自主学习了解,为学习后续的《国际金融》课程做准备。

## 4.4 讲课内容注意照顾学生的实际需要

临沂大学国贸专业的学生毕业后一部分可能去外贸企业工作,一部分可能去银行等金融系统工作,另一部分可能考研,而且近几年国贸专业毕业生考研去向中,有相当一部分学生考取了金融类研究生,因此,在讲课过程中,针对前一部分学生,教师结合各大外贸企业历



年招聘的笔试面试题目进行讲解；针对后两部分学生，则直接采用历年各银行金融系统考试题和历年相关专业考研试题进行讲解分析。这一做法有效激发学生学习的兴趣，不但将学生学习《货币银行学》的眼前任务和未来自身的工作设计和人生发展相结合，还能让他们看到《货币银行学》可以学习的地方还有很多，惟有现在打好基础，将来才能自由驾驭这些考试，实现自己理想的目标。

## 5. 教学效果评价

《货币银行学》作为临沂大学国贸专业的核心课程，该课程建设规划目标清晰、措施得当，可操作性强，体现了高等教育理念和地方性院校办学的特色。该课程经过多次研讨与改革，课程内容越来越符合应用型金融人才培养的特色，在教学效果上，取得专家及学生的好评。

首先，学校教学督导组专家和同行专家对《货币银行学》的教学质量和教学效果给予了高度评价，一致认为该课程教学体系完整，教学内容充实，教学方法灵活，教学以深厚的研究基础为依据，紧密联系金融实践，富有启发性，教学中既有系统知识的传授，也有对前沿问题的追踪，这极大地诱发了学生的学习兴趣，尤其是该课程给学生指定课外阅读文献和提出参考性研究课题，使学生在课程结束之后，仍然关注相关问题，在培养学生创新思维能力和独立分析问题、解决问题能力方面颇有经验。《货币银行学》的教学内容符合当今金融发展潮流和社会的需求趋势。

其次，学院每学期不定时召开学生代表座谈会，听取学生对教学的评价。近年来本课程的课堂教学学生评价结果都是优秀。学生认为银行学的教学内容不仅仅限于课本知识，还涉及到很多的课外知识及生活中的一些实例，并且采用视频、多媒体等多种教学手段和情景模拟、大量案例分析进行教学，既掌握了基础理论，又培养了实践能力。同时，教学内容准确、深刻，善于运用现实生活中的案例分析问题，易于理解、富有启发性；擅长利用教学方法与手段调动学生兴趣，应用效果良好。根据课本内容引申、扩充、引发学生钻研的兴趣，开展“银行分业经营、混业经营优劣的专题讨论”，启发学生深入思考、学习，收到良好效果。在教材及配套教学资料的选用上能与时俱进，不仅采用了全国一流的教材，而且挑选了大量配套资料，大大丰富了教学内容和扩大了学生的知识面。

在以后的教学过程中，货币银行学课程组针对《货币银行学》课程理论性强的特点，不断更新教学理念，根据岗位需求组织优化教学内容，把强化实践能力的培养，使国贸毕业生适应社会需求作为金融服务人才培养方案的指导思想，注重将所学知识向社会经济职业需要的转化，培养动手能力和操作能力，切实做到了使学生在走上正式工作岗位之前，掌握将来工作所需的基本知识与技能，从而使学生的综合竞争力增强，得到社会和用人单位的认可。

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## Explorations of an Android Platform-based Identification System for Insects on Experimental Teaching Reform of Agricultural Entomology

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**Abstract.** Agricultural entomology is one of the main courses for plant protection. And the experimental teaching has played an important role in enhancing the comprehension and practical ability of students. Now the traditional experimental teaching methods can't satisfy the demand of modern teaching. This study designed an identification system based on the Android platform, which would improve the quality of teaching and students' enthusiasm of learning. Moreover, the system is portable, practical and easy to use. It will supply a successful experience for other experimental courses.

## 基于 Android 的昆虫电子标本识别系统在农业昆虫学实验教学改革中的探索与应用

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**关键词:** 农业昆虫学、Android、电子标本识别、实验教学

**中文摘要.** 农业昆虫学是植物保护专业的骨干课程之一, 实验教学是增强学生对本门专业课程的理解、认知和提高实践能力的重要手段。鉴于传统实验教学的不足, 本研究基于 Android 开发了一种昆虫电子标本识别系统, 提高了本门课程的教学质量的同时, 拓宽了学生的获取知识面, 增强了学生的学习积极性, 在培养学生创新实践方面迈出了重要的一步。

农业昆虫学是植物保护专业的专业必修课, 是该专业的骨干课程之一, 是一门具有广泛理论基础的应用学科, 主要研究不同农田系统中有害昆虫的生物学特性、种群发生动态规律与周围环境因子之间的关系, 并制定相关措施对农业害虫进行有效治理。由于这门课程对植物保护专业学生的理论学习和专业实践的双重意义, 仅仅通过课堂教学是不能满足学生对于

重要农业害虫的综合认知，因此实验教学是弥补这一缺陷的重要手段。通过实验，使学生更加直观地了解农业昆虫，能够有效回顾课堂中的关键知识点，并且通过一系列操作增强学生的动手和思维能力。

在实验课堂中，运用比较多的是常见农业昆虫标本的观察、鉴定、分类，而随着时代的发展，传统教学方式的不足之处日益凸显，主要表现在以下方面：1) 标本类别及质量存在一定局限性，农业昆虫学实验仅仅贯穿在学期的特定阶段，所采集昆虫限于当季，非当季发生的昆虫为之前制作保存下来，虫体的颜色、形态等方面会发生一些变化，同真实田间情况存在一定的差异，若时间久远，标本也出现不同程度的损伤；2) 传统标本所涵盖信息量相对单一，即使鉴定出昆虫类别，无法第一时间同其生活习性、发生规律等相关联，教学载体缺乏生动性；3) 传统实验教学的有效利用时间仅仅局限在课堂，学生在课余时间所发现的农业昆虫无法在第一时间获取其准确信息，不能很好地激发学生的探索积极性。此外，当前学生主体也变成了“90”后，甚至“00”后，互联网及信息技术对他们具有更强的黏性，而传统的实验教学方法已然不能满足新技术时代下学生群体的需求。

随着多媒体、互联网及信息技术的高速发展，网络多媒体技术已经广泛应用于各类学校的教学过程中，大幅度提高了教学质量，节约了教学成本。近年来，智能手机快速发展，Android系统的出现，集拍照、上网、多媒体、通话等功能于一体，且操作简便，价格低廉，在全球范围内得到广泛推广。基于 Android 系统的普及和其操作系统的开源性，为我们利用此平台进行专业性 APP 开发提供了现实可能，并且有相关研究者也已成功设计出基于 Android 的手机农业专家系统。基于此，本研究提出并设计出了一种基于 Android 的昆虫电子标本识别系统，旨在提高学生获取信息的准确性、多样性、时效性，增强主动性，实现电子标本信息传递的交互性，为农业昆虫学实验的改革创新提供有效探索。

## 1. 系统总体架构

本设计基于 Windows 7 操作系统，成功配置“JDK + Eclipse + Android SDK + ADT + AVD”开发环境后，进行对应 Android 程序的开发。本系统总体框架包括三个部分：数据库服务管理层；信息整合推理层；用户终端使用层。

数据库管理层包括昆虫图片数据库和昆虫基本信息数据库两个部分。昆虫图片数据库包含各类昆虫的图片及文件名称、保存地址等相关资料；昆虫基本信息数据库包含图片数据库中对应昆虫的形态特征、生活习性、种群发生动态以及相关农业害虫的防治策略等信息。

信息整合推理层是系统的核心运算部分，负责整个系统功能的实现，根据数据库管理中心的内容，选择匹配的规则进行执行，对数据库中相应内容进行修改，通过一系列推理运算导出对应问题的结论。

用户终端使用层是实现用户使用价值的唯一界面，决定了用户使用体验和评价，手机安装对应 APP 之后，能够实现昆虫电子标本及基础信息的调取，昆虫电子图片的识别，昆虫电子标本信息的上传等。

## 2. 数据库建立

在本设计中，数据库中电子标本的多样性和完整性是决定该系统能否实现其自身价值。因此我们采用以下途径进行电子标本数据库的构建：1) 对已有馆藏标本进行拍摄，并通过交流方式去各地昆虫博物馆进行标本拍摄；2) 已有昆虫图片资料的收集；3) 田间所见昆虫的实时拍摄；4) 昆虫基本信息的收集、归类、整理。为保证昆虫电子标本的准确、完整、美观，所拍摄图片整理入数据库之前都必须经过 Photoshop 进行虫体和背景的处理，保证昆虫主要特征明显易辨；昆虫基本信息同电子图片一一关联对应，做到以“点”带“面”。

### 3. 电子标本的交互识别

电子标本的交互识别是本系统应用的最终目的, 学生(用户)在课堂中, 通过点击用户界面中昆虫名录, 就可以直接获得对应昆虫电子标本的直观形态特征及相关基本信息, 扩大了学生获得信息量的同时, 也提高了专业知识的趣味性和接受性; 学生田间调查或日常生活中遇到相关昆虫, 可以直接用手机拍摄, 将图片上传至服务器终端的数据库, 系统经过比对计算过后, 反馈出相应昆虫的名称、类别及相关基本信息, 第一时间解答学生的疑问, 同时学生也纳入丰富系统数据库的主体, 极大程度地提高了学生的积极性。

针对目前农业昆虫学实验教学中出现的一些问题, 通过运用多媒体、电子网络信息化的相关技术, 在传统教学的基础上进行改革和创新, 通过基于 Android 的昆虫电子标本识别系统的建立, 在很大程度上拓宽了学生的知识面, 提高了学生对本门实验课程的接受度和积极主动性, 将学习者的身份“反转”, 既是学习的主体, 又能以主导者的身份, 丰富电子标本的信息, 无形中扩展了学生的学习时间, 对创新和实践能力的养成大有帮助。本系统的设计为农业昆虫学实验这门课提供了一个新颖的教学方法, 同时也为本专业其他相关课程提供了一个良好的思路, 具备一定的推广价值。

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# On the Teaching Reform of "Method of Mathematical Physics"

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**Keywords:** Method of mathematical physics; Teaching reform; Application

**Abstract.** Method of Mathematical Physics is an important basic course in colleges of engineering. There exist some problems and shortcomings which should be solved or improved during the process of teaching this course in traditional ways. In this paper, we pointed out and discussed these problems, investigated the necessary of reforming on teaching contents, teaching ways and assessment methods about this course. Then a set of controlling reforming activities were given, which benefited from author's teaching experience and improved the current teaching model.

## 工科“数学物理方法”教学改革探索

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**关键词:** 数学物理方法; 教学改革; 应用

**中文摘要.** “数学物理方法”是工科院校的一门重要的数学基础课，传统课堂教学中存在很多亟待解决的问题与不足。论文指出并分析了这些问题与不足，探讨了该课程在教学内容与教学方式及考核方式方面改革的必要性，并针对目前的教学模式，结合笔者的教学实践，提出了具有操作性的改革举措。

### 1. 引言

“数学物理方法”是工科院校的重要数学基础课<sup>[1]</sup>，是一门承上启下的课程，用于巩固和强化学生在高等数学课程中所学到的知识，进一步为后续专业课程提供必要的数学基础和工具，训练学生运用数学工具解决实际问题的能力。该课程在培养学生的数学思维、创新能力和实际解决问题的能力方面起着重要的作用。这门课程特点在于数学知识与自动控制、电气工程、电子技术等课程之间的密切结合。它既有一定的数学理论深度，又有较强的应用性，内容主要包括了复变函数与积分变换两部分。其基础理论属于分析数学的范畴，应用部分涉及到控制、信息、电气等工程技术学科。这门课程是我校控制学院电气自动化以及信息学院电信等专业在大二开的一门重要的专业必修课，总课时为48学时，所用教材为西安交通大学高等数学教研室编写的《复变函数》<sup>[2]</sup>以及东南大学数学系张元林编写的《积分变换》<sup>[3]</sup>。

“数学物理方法”课程难度较大，涉及的概念、定理较多，题目难度较大。由于高校对现有的课程不断的进行改革，该课程的课时被一再压缩，我校由最初的64课时压缩到现在的48课时，且现有的教材在课程结构与课程内容方面存在一些有待改进的地方。如何在有限的课时里将课程的主要内容讲完，并提高学生对本课程的积极性是一个值得探讨的问题。

笔者从以下几个方面对该课程改革提几点建议，希望对该课程的教学改革起到抛砖引玉的作用。

## 2. 传统教学模式分析

### 2.1 目前教学中存在的主要问题是：

(1) 课程内容陈旧，结构安排不合理。多年来有关数学物理方法课程的教材一直是沿袭较严谨的相关数学教材的知识体系，特别是积分变换部分内容都是放到课程的最后讲，但这时学生的专业课已在此之前用到积分变换的知识。这部分内容滞后于后继专业课程的学习，不能很好地与学生的专业课程衔接。

(2) 课程内容与以往所学内容有重合现象，对这些重合知识点的讲授占用了本来紧张的课时。比如，现行教材多用较大篇幅讲述复数的有关内容，这部分内容学生在中学有所学习，关于区域的有关概念与高等数学内容也有所重复。另外，在现行的教材内容安排中有与后继专业课程无关的内容，比如共性映射部分，完全是出于保持数学体系的完整性而设，对学生后继专业课程的学习没有影响，根据实际情况可以将这部分内容删去。

(3) 教师授课时往往注重数学知识本身的严密性，强调数学层面的理论推导，却忽略了知识的应用，学生的实践主要以习题训练的形式，缺少研究型的实践应用。导致学生对本课程产生畏难情绪，丧失学习的兴趣。

### 2.2 教学方式、方法单一

多年以来我们对这门课的学习一直是采取教师讲授法：老师讲，学生听，课堂上师生之间的交流很少，这种被动的学习方式很容易使学生产生厌倦情绪，并且我们的课堂普遍欠缺知识背景与典型实例的介绍，这样就不能很好地激发学生对该门课程的学习热情。

### 2.3 考核方式的单一化

传统教学模式中这门课程都是在学期末闭卷进行理论考试，“一纸定成绩”这种考核不能很好地考察学生对这门课程的掌握程度，也不能反映学生的创新能力与利用所学知识解决实际问题的能力。

## 3. 新型教学模式的思考

基于以上分析，笔者认为对这门课程应该在课程结构，课程内容教学方法及考核方式上进行改革，以便能更好地提高教学效果，加强学生的应用知识的能力。

### 3.1 课程结构的改革

目前，多数高校对该门课程的教学都是按照先复变函数然后积分变换的顺序进行。事实上，学生在积分变换学习之前的专业课程学习中已经用到了积分变换的内容，因此课程内容滞后于专业课的学习，且复变函数中的级数及留数部分不影响积分变换的学习。针对此，我们不妨在学习完复变函数中的复积分之后进行积分变换的学习。最后再讲授级数与留数的内容。将留数部分放到最后学习还有一个好处就是，可以很自然地运用拉普拉斯变换去求留数。

## 3.2 教学内容的改革

在较短的课时时间里要将“数学物理方法”的所有内容都讲完是不现实的，所以我们必须对教学内容进行一番取舍，遴选重点内容，对实用部分进行重点讲述。突出课程的实用性，突出数学物理方法解决实际问题的特点，对课时有一个较合理的分配。

由于我校工科数学物理方法课程主要针对电气、自动控制等专业，因此完全可以根据专业需要对教学内容进行调整，选取。在选取时一定要注意实用性，突出课程的应用特点。调动学生的学习兴趣，提高教学质量。

### 3.2.1 复变函数部分的处理

复变函数教材中有些内容在高等数学中已经有一定的学习，在本课程中可以删减压缩部分内容，减少课时。比如复数的知识，学生在中学已经有了一定的学习基础并且内容较为简单，所以课堂上我们只需简单提一下就可以，不需要花费大量时间去讲解；再比如复变函数中极限、连续、导数的概念这些内容与简单的基础课程是一致的，故在讲授这些概念时可与高等数学中的函数、极限、连续、导数等概念进行比较，简单讲授，这样有利于学生理解，也可节省课时，同时通过新旧知识的比较和思考，也可以让学生体会到运用知识的乐趣培养学生创新意识和创新能力。对于课程中出现的一些特别冗杂的理论证明，完全可以舍弃。比如解析函数高阶导数公式的证明<sup>[2]</sup>，泰勒展开定理的证明等。

除此外，共形映射内容在课时减少后也可以舍弃，因为通过与部分专业课老师交流知道舍弃这部分内容不会影响学生的后续课程的学习。对于课本中画星号的内容，我们也是根据学生的专业特点，进行取舍，比如平面场的复势部分我们舍弃不学（这部分内容如果授课对象是物理专业的学生应该重点讲），又比如，对数留数与辐角原理部分，因为这部分内容与后续要学习的系统运行的稳定性知识联系密切，专业性应用性较强，故我们选择讲。

教学内容的合理取舍，使工科学生既避免了在后续课程不涉及的内容上付出过多精力，又增加了学生的学习兴趣。

### 3.2.2 积分变换部分的处理

傅里叶变换和拉普拉斯变换内容是电子通信技术和信号处理、自动控制原理、电路分析中的一种常用且重要的数学工具<sup>[3]</sup>，对这部分内容需要教师补充大量的实例来充实课堂教学，教会学生对常见的信号进行频谱分析。当然这首先要求授课教师对这部分专业知识有一定的理解。特别是拉普拉斯变换部分，这种变换方法具有很强的实用性，用这种方法可以将时域中讨论的函数转化为频域中讨论，能够方便的求解积分微分方程，可以解决许多实际的电路问题。因此这部分内容在讲清楚理论的基础上，可以适当增加课时，结合专业补充大量的应用型例子，强调理论与实践的结合。同时让学生认清该课程在专业课程中所占的重要地位，提高学生对该课程的重视程度，充分调动学生的学习兴趣，从而提高教学质量。

## 3.3 教学方式、方法的改革

### 3.3.1 传统讲授与讨论式教学结合的教学方式

以往这门课程的教学方式主要是老师讲授，学生被动的听，师生之间的交流较少，学生没有真正的参与课堂教学，学习的主动性不高。所以，我们需要改变以往“填鸭式”的教学方式，注重采用启发讨论式教学，通过精心备课，将知识技能通过学生乐于接受的方式传授给他们，比如对所讲内容尽量提出问题情境引导学生积极参与，并独立思考，充分发挥学生学习中的主体作用，积极鼓励学生发表自己对问题的看法。即使学生回答不太准确也要积极鼓励，不能挫伤学生的积极性。课堂教学实践证明，这种传统讲授与讨论式教学相结合的教学方式在一定程度上能提高学生对该课程的学习兴趣，提高课堂教学质量。

### 3.3.2 课内讲授与课外探究结合的教学方式

在教学上除采用传统讲授与讨论式教学相结合的方式外，考虑到该课程与学生专业课的紧密关系，可以采取课内讲授与课外探究相结合的方法。数学物理方法是一门很适合做课外

探究的学科，我们在讲授这门课时就采取了这种方式，比如在学习应用性较强的积分变换部分内容时。我们对学生进行了分组，给每个小组提出研究性小课题（小课题主要是数学物理方法在专业课程中应用方面的，也可以是学习总结），让学生在课下围绕自己选的小课题去查资料，最后大家形成一个文字性的东西，并选择做得较好的几个小组将自己的研究成果做成幻灯片。在讲授了部分理论知识后，留出2个课时让学生到讲台上客串一次老师，给大家讲讲他们的工作。事实证明，学生对这种教学方式非常认可，积极主动地报名，认真围绕选题去搜索资料，当小组代表在课堂上讲他们的研究成果时，其他同学都能聚精会神地听。在学生们看来，针对性较强的课题研究使得数学物理方法在后续专业课程中的应用更加具体化。几学期的教学实践表明，这种主动的、开放式的课堂教学使得课堂教学空间得到了拓展，比起传统的课堂教学更能调动学生的学习兴趣。这种主动的学习也能加深学生对知识的认识、理解，培养学生运用所学知识解决实际问题的能力。

### 3.4 考核方式的改革

“数学物理方法”这门课程，我们原来的考核成绩一般由平时作业、期末考试两项组成。考核方式单一，不能很好地反映学生的创新能力以及运用知识的能力。因此在教学方式改革的基础上，我们对考核方式也进行了相应的改革，考核成绩除了期末考试成绩外，还可以结合学生撰写小论文与参与小课题研究的表现，以及参与课堂讨论的表现等综合评定。具体分成3项：论文项目及课堂表现、课后作业、期末考试，分别按照25%，15%，60%的比例综合计算。考核方式的多样化不但调动起学生平时学习的积极性，也提升了学生的创新思维。

## 4. 结论

在《数学物理方法》教学中培养学生的创新能力与思维能力，并能熟练应用这一工具去解决问题是我们的教学目标，任何的教学改革都应该围绕着这一目标进行。以上几点是笔者关于《数学物理方法》教学改革的几点设想，希望在有限的学时内可以运用多种教学方式和手段使学生更轻松的掌握基本的知识技能，进一步提高这门课的课堂教学质量。

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# The Construction and Thinking of Multi-media Network Assisted Teaching in Science and Engineering Mathematics

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**Keywords:** Teaching innovation; Online classes; Multi-media network assisted teaching.

**Abstract.** With the rapid development of information technology, College students have rich reserve of knowledge of computer technology, which has created favorable conditions for the smooth implementation of multi-media network assisted teaching of science and engineering. Based on the analysis of the deficiency of traditional multimedia teaching and the construction scheme of network assisted teaching, as well as some problems in the teaching process, the author discusses how to employ the information technology to carry on the network teaching so as to expand the space and time of teaching and learning in mathematics courses and improve students' learning effect, which also provides students with a more convenient, efficient and independent way of learning.

## 理工科数学多媒体网络辅助教学的构建与思考

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**关键词:** 教学改革; 网络课堂; 多媒体网络辅助教学

**中文摘要.** 随着信息技术地快速发展, 以及当今大学生对计算机技术的知识储备, 为顺利实施理工科数学多媒体网络辅助教学创造了良好条件。作者从传统多媒体辅助教学的不足到多媒体网络辅助教学的建设方案、辅助教学在实施过程中遇到的一些问题两个方面进行了总结, 讨论了如何利用信息技术进行网络辅助教学, 从而拓展数学课程教与学的空间与时间, 提高学生的学习效果, 同时也给学生提供了一种方便、高效、自主的学习方式。

### 1. 引言

理工科数学类课程旨在培养学生的运算能力, 逻辑思维能力与空间想象能力, 进而提高学生逐渐学会运用所学数学知识来分析和解决实际问题的能力。但是由于数学课程具有知识体系庞大、运用范围广泛的特点, 加上传统课堂教学和辅助教学技术的局限, 使理工科数学课程成为高等学校学生普遍反映学习难度较大的课程之一。

与此同时，随着多媒体网络技术的飞速发展以及学校良好的网络资源，多媒体技术在教育领域特别是在网络辅助教学中受到了普遍应用。以计算机网络以及多媒体为主要代表的现代教育信息技术已经成为推动教学改革，提高教学质量的重要手段。为充分发挥现代教育信息技术在理工科数学辅助教学的作用，改变传统的教学模式，激发学生自觉探索知识的热情，作者将从实际出发探讨了构建多媒体网络辅助教学的几点认识。

## 2. 传统多媒体辅助教学存在的主要问题

理工科学生的数学基础和数学素质良莠不齐，特别是对于大一学生而言，他们要面对大学课堂与高中课堂授课模式的不同，需要逐步适应大学节奏的学习。然而，现在大部分数学类课程都采用多媒体课件授课，本身数学课程完全采用多媒体课件授课就存在一定的争议<sup>[1]</sup>。其突出问题主要是教学节奏过快，在传统黑板授课环境下，学生可以跟随教师的板书进行同步思考，此时，教与学的双方在思维上是基本一致的。而采用多媒体课件授课后，虽然节省了大量的板书时间，增加了课堂授课的知识量，但教学内容在屏幕上的呈现速度过快，使得教学节奏不好把握，特别是对于年轻教师更是如此。学生普遍反映上课时笔记记不上，思维跟不上，不得不在课后打印教师的课件进行相关学习。甚至由于缺乏必要的板书。试想：如果这种教学状况不能加以改善，那么课堂授课就变成了全盘式的灌输式教学，教学效果势必大打折扣。

另一方面，多媒体课件授课在一定程度上限制了教师的活动，由于课前已精心制作了课件，教师的思维基本上跟着课件的既定顺序进行，思维在一定程度上受到了限制，当出现一些新的解决问题方法时，只能在有限的屏幕上进行。其次，有些教师对教学内容不够熟练，过分依赖课件，不但损害了学生求知过程中的创造性的发挥，而且与提倡的培养学生创新精神的要求背道而驰<sup>[2]</sup>。

与此同时，同属教学中重要环节的答疑环节的进行对于数学类课程的学习也是至关重要的。传统的答疑形式都是教师在办公室，有问题的同学主动来找老师解决问题，这种面对面的沟通方式无疑是最好和最有效的，但同时也要面临一些问题。比如，教师少，学生多的问题；学生不愿意或出于种种原因不好意思来办公室找老师的问题等等。所有这些问题都限制了教师跟学生的及时沟通，造成师生间的信息不畅通，从而教师也无法根据学生们实际调整自己的教学方案，“以学生为本”的教育理念无法得到完全的实施。

## 3. 多媒体网络辅助教学的构建策略

为了解决以上所提到的一些问题，构建全方位、立体化的多媒体网络辅助教学系统就显得尤为重要。这种辅助教学系统主要依托于计算机网络技术，多媒体技术（比如Flash流媒体等）来实现对数学课程学习的全方位、全天候、立体化的辅助教学。下面从四个模块进行介绍。

### 3.1 课程信息

该模块主要介绍课程定位及性质、教材及参考教材、教学大纲、教学计划、教学目标、教学方法和手段等信息，使学生对该课程在总体框架上有个较准确地把握，真正做到充分了解教材的特点以及教学目标。

### 3.2 在线自主学习

我校拥有领先的网络资源。该模块主要结合传统多媒体课件的不足，把丰富的课程学习资源借助计算机网络实现资源共享，充分调动学生学习的主动性。该模块主要包括：课程课件的在线浏览、课程教案以及多媒体网络课堂，特别是新购买了试题库，教师进一步充实试题库，让学生在有限的时间段内对所学知识能有针对性的在线测验，极大地提高了教学效果。

多媒体网络课堂模块可以采用网络流媒体技术<sup>[3]</sup>实现课堂教学的真实再现,网络课堂还具有很强的开放性。它突破了传统教学工作中对场所的限制,将视频、声音、课件等多种信息有效整合,使学生的学习时间和空间从课堂延伸到了课外,大大提高了学生的学习兴趣 and 复习的效果。

### 3.3 传统辅导与在线答疑辅导有机结合

传统的面对面的辅导是效果最好的一种辅导形式,因此这一环节不可荒废,还应根据实际情况增加值班老师的数量,进一步满足学生的答疑需求。与此同时,还应借助计算机网络建设相关的在线辅导体系,主要包括:非实时的网上答疑系统,实时的在线答疑系统与在线测试系统。其中实时的在线答疑效果最好,这一系统可以借助于传统的一些即时通讯工具,如QQ,微信等,还可以使用专门用于学校课程交流的即时通讯工具,如赛通(Symtone)软件,则完全可以实现数学公式的在线输入问题,通过建立相应的“群”(如QQ群或赛通群)还可实现由教师主导的多人共同探究式学习。

### 3.4 课程知识拓展

数学实验主要是以计算机数学软件的应用为平台,结合数学模型,模拟实验环境进行教学的新型教学模式。整个实验过程强调学生的自主探索和动手操作<sup>[4]</sup>。可以通过网络发布相关问题的数学模型与解题思路,引导学生动手实践,在探索中加深对课程知识的学习。它能真正培养学生的思维能力、动手能力、创新能力,充分发挥学生在教学中的主体作用。这一环节可以结合每年一度的全国大学生数学建模竞赛进行,为了进一步扩大受众面,还可以进行校级的数学建模竞赛并配套相关的政策,调动学生学习的主动性。

### 3.5 数学公式和符号

该模块主要展示课程的相关知识,如数学史,数学趣味知识,数学在实践中的应用案例等等,把枯燥的数学课程变的更有趣味性。同时,还可以通过建立课程博客,教师个人博客甚至是教师课程授课微博等较流行的工具进一步拉近跟学生的距离,实现知识的快速传播。

总之,通过这种课堂授课、面对面答疑辅导、利用计算机网络的在线学习辅导等多种形式的立体化教学辅导的进行,可以极大地拓展课堂空间与学习时间,增强同学们的学习效果,也有助于培养学生的创新精神与实践能力。

## 4. 存在的问题与思考

虽然现代教育信息技术与数学课程的有机结合可以极大地提高教学质量,但在实施过程中出现的一些问题也值得我们思考。

首先,对于现代教育信息技术的学习,多数教师并没有表现出很大的积极性,这与数学教师的计算机功底不深有着很大的联系,同时相关的配套政策跟不上也是原因之一,教师在这种教学模式中投入的时间、精力跟产生的教学效益的定量与定性评估的结果有很大差异,有待于进一步的研究。

其次,传统的数学教育理念也需要与时俱进。现在的数学教育理念还是把大部分的精力放在了如何锻炼学生的计算能力,而忽视其数学素养的教育。在计算机普及的今天,大多数情况下已经不需要人工计算求解问题,而只要求解的方法即可,其计算过程可以交给计算机处理。以计算机为核心的新教育技术的运用也必将促进教育手段、教学方法、教育理论的变革,将引发教学方法、教学模式、教学观念等一系列变革,它将改变数学教学的面貌<sup>[2]</sup>。

最后,还必须要面临的一个问题就是学生的计算机知识特别是计算机设备的配置问题。现在有些学校为了能够让大学一年级新同学刚进入大学校园不沉迷于计算机网络游戏而禁止学生携带使用计算机,这在一定程度上阻碍了教育信息化的发展,虽然学生去学校的机房同样可以去完成学习,但毕竟还是使用自己的计算机比较方便。其实可以对大学生采取“疏”

的教育策略，引导学生如何利用计算机辅助自己的学习而不是“辅助”自己的娱乐，利用网络平台进行数学课程的辅助学习就是有效的引导方式之一。

## 5. 结束语

立体化网络辅助教学的优点在于其相关教学资源的广泛性和教师与学生、教师与教师之间的有效的在线沟通与交流，要发挥这种教学模式的有效性，教师必须经常更新自己的知识结构，与学生形成真正的互动。使现代教育信息技术真正融合进自己的平时教学中，并不断地加以改进与完善，使其更有利于激发学生的学习兴趣，更好地为教学服务。

## 致谢

本文为山东省教育科学“十二五”规划2015年度“高等教育数学教学专项”重点资助课题《基于提升大学生专业素养的高等数学教学研究》（ZBS15002）的阶段性成果之一。

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## Investigation and Analysis on the Situation of ESP Teaching in Private Universities of Hubei Province

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**Keywords:** ESP teaching; Questionnaire; Analysis.

**Abstract.** ESP is a kind of English teaching model that students' learning demand determines the content and methods of teaching, emphasizing the instrumentality and pragmatic nature of English. It contains clear objectives and target with high practical value. Combining basic requirements for English teaching during the transition from research university to applied technology university, the paper analyzes the results of ESP teaching questionnaire, including ESP motivation and attitude, ESP curriculum and duration setting, ESP teachers and teaching methods, points out that the current situation and problems faced by ESP teaching, and makes some suggestions. ESP teaching should reflect the function of English using as a teaching tool, so as to achieve the purposes of guiding instructors' teaching practice, changing students' language knowledge into language skills, making teaching goals and objectives consistent with employment target, cultivating talents adapting to the needs of job market.

## 湖北省民办高校ESP英语课程学习状况调查分析

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**关键词:** ESP教学; 问卷; 分析

**中文摘要.** ESP专门用途英语是学生学习需求决定教学内容和方式的英语教学模式, 强调英语工具性和应用性, 目标明确、针对性强、实用价值高。本文结合民办院校普通研究型高校向应用技术型大学转型中对英语教学的基本要求, 针对几所民办院校的ESP英语课程教学调查问卷结果进行分析, 包括ESP学习动机和态度、ESP课程和课时设定、ESP教师和教学方法等, 指出ESP教学的现状和面临的问题, 并提出一些建议。ESP英语课程应体现英语教学的工具性, 以达到指导教师教学实践、将学生语言知识转化为语言技能、使教学目标与就业目标一致、培养适应就业市场需求人才的目的。

## 1. 引言

ESP是English for Specific Purposes 的缩写,即“专门用途英语”或“特殊用途英语”,如旅游英语、财经英语、医学英语、工程英语、商务英语等。随着全球经济飞速发展,科学技术日新月异,国际贸易、金融保险、电子商务、境外旅游、国际科技竞赛等全球范围内的交流愈加频繁。

2014年6月《国务院关于加快发展现代职业教育的决定》(国发〔2014〕19号)提出,引导普通本科高等学校转型发展,招生、投入等向应用技术型高等学校倾斜,建立健全课程衔接体系,将职业道德、人文素养教育贯穿全程。同时,民办高校大学英语应用型课程的设计和教学模式也必将发生重大改变。2015年3月发布的《大学英语教学指南》提出,应“充分挖掘大学英语课程丰富的人文内涵,实现工具性和人文性的有机统一”。工具性不仅体现在提升和拓展基础教育阶段的英语教学,也体现在满足大学生职业需求的技能型教学。

首先,笔者根据目标需求分析与学习需求分析理论和大学英语ESP课程设计和模式设计出完整的问卷,分发给武汉科技大学城市学院,武汉外语外事职业学院和武昌工学院的在校学生,搜集他们的性别、专业、年级,对ESP课程的设置、教学模式、教学硬件、师资力量需求和认知。

其次,分析搜集的数据,梳理湖北省民办高校ESP教学体系的现状及存在的问题,积极探索ESP课程设计、教学模式,大学英语教师职业发展方向,提升我省民办高校英语教学质量,提高民办高校毕业生学术和职业英语能力,深化教育改革具有一定理论意义和实践价值。

## 2. 调查问卷内容

### 2.1 内容设置

第一部分是学生的基本资料,包括学生性别,专业和年级;

第二部分是赋值选择题,包括ESP学习动机和态度、ESP课程和课时设定、ESP教师和教学方法等;

第三部分是多项选择题,要求学生阐明ESP教学存在的主要问题,以及提出意见和建议。

### 2.2 调查对象

调查问卷涉及武汉科技大学城市学院,武汉外语外事学院和武昌工学院等三所院校部分专业的学生。

### 2.3 调查的局限性

由于学生认知水平与认知结构的差异性,对社会需求了解的有限,以及对自己未来从业领域理解偏差,会在某种程度上使问卷结果存在主观性和不确定性;部分学生不切实际的就业期望值也会在某种程度上影响数据反映问题的真实性。

## 3. 调查问卷分析

### 3.1 ESP学习动机和态度

学习动机是促使产生学习行为的内在驱动力,是社会和教育的客观需求在学生头脑中内在映射。依据引起学习动机原因来划分,可以分为二类。

一是内部动机,指在学生自身内部因素影响下所产生的学习动机,包括兴趣、好奇心、探究欲、或进取心等。民办高校学生英语水平普遍偏低,学习兴趣不足,学习意识淡漠,属于被动学习者。在ESP学习动机和态度调查部分,60.4%的学生仅为CET-4考试合格水平,对ESP英语学习兴趣一般,自身学习效率低下,认为ESP学习会影响专业学习。34.6%的学生

对ESP学习较有兴趣,认为以后工作中使用ESP英语情况较多,但自身学习动力不足,自律性不强,需要科学合理的ESP课程设置和老师较严格督促教育。

二是外部动机,指由外部因素或现实情境影响,在外力推动下产生的学习动机。在调查中,虽然英语水平普遍不高,但78.3%的学生同意ESP英语学习的动机是考虑到将来工作上的需要,学校开设ESP课程很有必要;而认为学习ESP仅仅为了通过学校考试,拿到学分的学生占10%;还有一部分学生的外部动机来源于家长的要求,认为家长为其提供经济来源,应该努力学习作为回报。

这些数据表明,民办高校学生普遍了解到学习ESP英语的重要性,意识到不断融合的国际化社会对于ESP英语迫切需要,ESP学习对于未来工作的益处,认为以英语为工具会帮助掌握更懂的专业知识,并对自己有一个比较清晰的定位。然而,普遍性中又有差异性,文科专业学生,特别是国际贸易和商务英语专业学生,比理工科专业学生更加重视ESP学习,内部驱动力更强,兴趣更为广泛,视野更为开阔。这说明ESP学习对学生影响程度很大部分取决于专业的不同。

### 3.2 ESP课程和课时设定

课程设置体现了专业的培养目标,如何安排低年级的大学英语基础课程与高年级ESP英语课程,把语言技能的训练和专业素养的培养有机地结合起来是一个很值得探讨的问题。47.9%的学生认为英语听说读写基础技能培养占用学时过长,与自身专业关联不大,应该大力削减基础英语课时,增加ESP学习课时。40.2%的学生认为自身英语水平有限,不一定能够跟上ESP课程学习进度,盲目减少基础英语课时不可取。

54.3%的学生认为ESP课程不应再强调学生英语基础水平提升,而是侧重提高学生英语应用能力和交际能力,突出教学内容的实用性和针对性,体现英语的工具性,使学习内容能够解决未来职业领域问题。25.8%的学生认为ESP课程设置应充分考虑学生就业需求,增加英语商务合同,英语工作汇报,英语笔译等方面内容。

这些数据表明学生在ESP课程设置方面非常重视,因为这与以后就业有着直接而紧密的联系,并且科学合理的设置对激发学习兴趣,拓展国际化视野,提升职业素养大有裨益。所以,民办高校应在ESP课程设置方面,充分考虑市场和就业需要;在开设课程数量和学时、所占学分比例、课程难易程度及与学生专业内在关系等问题上慎重考虑,这些是直接影响人才培养质量的重要环节。此外,ESP课程设置还要遵循英语学习规律,循序渐进,避免英语功利性、工具性的现象,使学生掌握扎实的英语基本功,培养符合市场经济的复合型人才。

### 3.3 ESP教师和教学方法

在调查中发现,76.5%的学生反映ESP教学主要以汉语教学为主,英语为辅,任课老师为专业课老师,英语水平并不高,发音不标准。65.4%的学生认为ESP教学还是传统课堂教学方式,老师讲授为主,学生被动接受,毫无互动性,教学方式手段单一,导致学生兴趣不大。45.3%的学生认为课堂沉闷枯燥,欠缺课堂学习氛围,随堂练习不够,难以消化课堂所学,对ESP教学不太满意。65.4%的学生认为需要将非常受学生欢迎的教学方法加入到课堂,如任务型教学法、情景教学法、实训操练、小组辩论等。

这些数据表明,ESP教学在师资和教学方法方面情况不太乐观,仍然实行以教师为中心的教学模式,忽视学生主体性。课堂教学局限于老师枯燥讲解,用汉语解释英语专业词汇,而无视ESP学习的学习情境和实用语境。这种片面强调教师的单向输入而忽视学生学习感受和接受程度的做法,加上ESP学习本身有一定难度,会使学生产生厌烦情绪,从而抵触ESP课程学习。

#### 4. 意见和建议

首先,压缩基础英语课程,增设学术和专业英语课程。占总课时67%的听、说、读、写课程在英语专业的课程设置里面应该大幅度地压缩至30%;根据市场需求增设专业英语课程,如科技英语、经贸谈判英语、电子商务英语等,尤其是专业英语技能课程,如国际会议、报告陈述演示、科技论文写作、文献阅读与检索等;鼓励学生在完成英语专业学习的同时辅修相关第二学位,如金融学、市场营销学、财务管理、法学等。

其次,整合教学方法。从传统的灌输性教学到以内容为依托的教学改革。教学过程中把语言技能训练和知识内容传授有机地融合起来,相互促进,实现知识建构、思维训练与英语技能提高三位一体的目标。

最后,加速民办院校大学基础英语教师向ESP教师转型,研究如何科学地完善ESP教师培养体系,并实现对ESP教师的学术和专业知识的培训,为大学英语后续教学体系建设提供可靠的师资力量。

#### 5. 小结

大学英语后续教学体系是民办高校建设应用技术型大学过程中相当重要的组成部分。本研究利用需求分析理论,剖析后续英语课程的规律特性,引入ESP教学理念,为大学英语后续教学体系的研究提供了一个全新的研究视角,这也是一种全新研究范式的尝试和拓展。

通过调查发现,湖北省民办高校的ESP教学普遍存在缺乏统一的教学目标、科学规范的教材、合理的课程考核机制、有效的教学模式和方法、师资力量薄弱等问题。本文通过数据分析,整理出相应的建议和意见,旨在解决ESP教学过程中的问题,锻炼学生跨文化沟通技能、职业合作能力、逻辑思辨能力和解决问题、完成工作的能力,培养满足社会和市场需求的现代化复合型人才。

#### 致谢

本文为2015年湖北省教育科学规划一般项目《基于需求分析理论与ESP的湖北省民办高校英语课程后续教学体系研究》的阶段成果之一。

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## Mathematical Beauty

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**Keywords:** Mathematical beauty; Golden section; Yang Hui Triangle.

**Abstract.** Mathematics is not only esoteric, but also beautiful in many aspects of our life. This paper introduces mathematical beauty in daily life in terms of the beauty of harmony, the beauty of symmetry and the beauty of curves. Among them, golden section is mainly introduced in the beauty of harmony, and Yang Hui Triangle is the focus of the beauty of symmetry. Finally, the paper shows many beautiful curves, and most of them come from the nature.

## 数学之美

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**关键词:** 数学美; 黄金分割; 杨辉三角

**中文摘要.** 数学不仅是深奥的, 而且是美的, 在日常生活中许多地方都体现着数学美, 本文先后从数学的和谐美, 对称美和曲线美这几方面介绍了数学美在日常生活中的体现。其中, 和谐美中重点介绍了黄金分割美; 对称美则着重于介绍杨辉三角; 最后展示了生活中许多漂亮的曲线, 大多在自然界中有所体现。

### 1. 引言

爱美之心, 人皆有之。

艺术是美的, 大自然是美的, 数学也是美的。

古今中外有许多知名学者都认为数学是美的, 并做过精辟的论述:

英国哲学家、数学家罗素认为: “数学, 如果正确的看待它, 而且也具有至高的美, 是一

种冷而严肃的美。”

我国现代著名数学家徐利治教授提出：“所谓数学美的含义是丰富的，如数学概念的简单性、统一性，结构系统的协调性、对称性，数学命题与数学模型的概括性、典型性和普遍性，还有数学中的奇异性等，都是数学美的具体内容。”

其实，数学美并非高深莫测，触不可及，当看到一个优美对称的图形，当得到一种巧妙的解题方法，我们心中就充满了美。

只要我们有一双善于发现的眼睛，一颗善于体会的内心，就会得到一个结论：

日常生活中的许多地方都体现着数学美。

本文将从数学的和谐美、对称美、曲线美等方面阐述数学美在日常生活中的体现。

## 2. 数学的和谐美

“美就是和谐，整个天体是一种和谐，宇宙的和谐是由数组成的，因而构成了整个宇宙的美。”（毕达哥拉斯）

“一切绝妙的美都显示出奇异的均衡关系。”（培根）

“美是各部分之间以及各部分与整体之间固有的和谐。”（海森堡）

和谐美本意是指部分与部分之间、整体与部分之间可以引起直观快感的比例关系。

和谐的实例中最负盛名的是被中世纪德国数学家、天文学家开普勒（Kepler）称为欧氏几何学两颗明珠之一的黄金分割。

将一条线段  $AB$  分割成大小的两段  $AP$  和  $PB$ ，如图 1，若小段  $PB$  与大段  $AP$  的长度之比等于大段  $AP$  与全段  $AB$  的长度之比，即  $\frac{PB}{AP} = \frac{AP}{AB}$ ，此时线段  $AP$  叫做线段  $PB$ 、线段  $AB$  的比例中项（也叫中外比），这种分割称为黄金分割，点  $P$  叫做线段  $AB$  的黄金分割点。



图 1

先来计算一下，设  $AB=1, AP=x$  那么

$$PB = AB - AP = 1 - x$$

由于  $AP^2 = PB \times AB$ ，所以  $x^2 = 1(1-x)$ 。

解此方程得

$$x_1 = \frac{\sqrt{5}-1}{2}, x_2 = \frac{-\sqrt{5}-1}{2} \quad (\text{不合题意, 舍去})$$

$$\text{即 } AP = \frac{\sqrt{5}-1}{2} \approx 0.618。$$

这个黄金分割值 0.618 就是“黄金数”，一般用希腊字母  $\Phi$ （音 phi）表示。

黄金分割数 0.618 数是十分有趣的，0.618 的倒数是 1.618，即  $0.618 \times 1.618 = 1$ ，并且

$$\frac{1-0.618}{0.618} = 0.618, \text{而其它数字均无此特征。}$$

黄金数与连分数：

$$\text{由线段的黄金比 } \frac{1}{x} = \frac{x}{1-x},$$

$$\text{有 } x^2 = 1-x, x(1+x) = 1, \text{得 } x = \frac{1}{1+x}。$$

对等式右边分母中的  $x$  又以  $\frac{1}{1+x}$  代替, 可得  $x = \frac{1}{1 + \frac{1}{1+x}}$ 。

依次类推, 可得连分数:  $x = \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots}}}}$

这样一个简洁的连分数给人以有序而无穷的印象, 使人具有不言而喻的美感. 它的计算随着分母数 1 的层数的增加, 其结果就越接近黄金数 0.618。

该连分数是一个无限的正则连分数, 其渐进分数正是斐波那契数列前后两项之比。至此, 黄金分割连分数之间在内在的数理关系上, 表现出完美的统一。

### 3. 数学的对称美

“对称”一词在希腊语里是“般配”的意思, 轴对称、点对称和面对称, 给人的是一种均衡的美感, 正弦和余弦、奇数和偶数、指数和对数、微分和积分、命题和逆命题、……, 这些给人的是完整自然的美感。所以我认为, 对称的美, 来自于它自身的平衡, 来自于它本身的全面。

数学的对称美在其形式上的体现最为广泛, 例如, 杨辉三角形[8]。杨辉是我国宋朝的数学家, 在他的著作《详解九章算术》中记载了二项展开式的系数表。

对于二项式定理

$$(a+b)^n = C_n^0 a^n + C_n^1 a^{n-1} b + \dots + C_n^r a^{n-r} b^r + \dots + C_n^n b^n \quad (n \in N)$$

它的展开式的系数表为

$(a+b)^0$	.....	1							
$(a+b)^1$	.....		1		1				
$(a+b)^2$	.....		1	2	1				
$(a+b)^3$	.....		1	3	3	1			
$(a+b)^4$	.....		1	4	6	4	1		
$(a+b)^5$	.....		1	5	10	10	5	1	
$(a+b)^6$	.....		1	6	15	20	15	6	1
$\vdots$									

杨辉三角形是等腰三角形, 它左右对称, 从右上到左下的方向或者从左上到右下的方向看, 第一层全是 1; 第二层是 1, 2, 3, 4, 5, 6, ……; 第三层是 1, 3, 6, 10, 15, ……; 从前一项到后一项的递增幅度分别为 2, 3, 4, 5, ……; 第四层是 1, 4, 10, 20, ……; 从前一项到后一项的递增幅度分别为 3, 6, 10, 15, ……; 递增幅度的递增幅度为 3, 4, 5, ……; ……

上海科技博物馆前的大理石雕塑上就刻着这个三角形, 天天都有国内外的游客去观赏, 去评论, 去回味, 这不仅是古代数学家的智慧, 而且体现了数学的对称美。

杨辉三角形也称为杨辉金字塔, 直到现在, 仍有许多赫赫有名的数学家对建造对称的数字金字塔饶有兴趣. 下面是美国数学家阿尔伯特·H·贝勒在《数论妙趣》中的数学金字塔之

一:

$$\begin{array}{rcl} 1 \times 1 & = & 1 \\ 11 \times 11 & = & 121 \\ 111 \times 111 & = & 12321 \\ 1111 \times 1111 & = & 1234321 \\ 11111 \times 11111 & = & 123454321 \\ 111111 \times 111111 & = & 12345654321 \\ 1111111 \times 1111111 & = & 1234567654321 \\ 11111111 \times 11111111 & = & 123456787654321 \\ 111111111 \times 111111111 & = & 12345678987654321 \end{array}$$

它由左右两个金字塔构成,左边的金字塔以“×”为对称轴,右边的金字塔以中间 1, 2, …, 8, 9 为对称轴.当左边是两个相同的全由数字 1 构成的 n 位数相乘时, n 从 1 到 9 的整数, 右边对称轴上的数字为 n, 然后分别向左右两个方向以步长-1 递减至 1。

数学的对称美在内容上表现为它的完整性, 由  $1-2=?$  引入负数, 由  $\sqrt{-1}=?$  引入虚数, 由函数想到反函数, ……这使得数学理论更具系统性, 更具统一性。

## 4. 数学的曲线美

### 4.1 雪花曲线

如图 2, 先做一个等边三角形, 再把每边三等分, 将居中的三分之一部分向外做一个小等边三角形, 并把每一个小三角形的底抹掉, 得到一个六角星形, 再在六角星形的每一条边上以同样的方法向外做出更小的等边三角形, 于是曲线变得越来越长, 开始像一片雪花了, 不断做下去, 图形更美丽。



图 2

这个曲线任何部分都与整体相似, 具有这种性质的图形叫“分形”, 因为这是一个新的领域, 所以对“分形”没有准确定义。

计算机使这种美丽的图案更加美丽, 分形图案被广泛的用在各种各样的物品上, 如图 3, 它在家居布置和服装设计上的较为广泛。



图 3

## 4.2 等角螺线

如图 4，先做一个  $8 \times 13$  的黄金矩形（宽与长之比为黄金数的矩形），以 8 为边在其中做一个正方形，又会得到一个  $5 \times 8$  的黄金矩形；在这个  $5 \times 8$  的黄金矩形中，再以宽 5 为边画正方形，又构成一个  $3 \times 5$  的黄金矩形，这样的过程再继续下去，又可得到一个  $2 \times 3$  的黄金矩形。然后分别以各正方形靠“里”的一个顶点为圆心，以正方形的边长为半径，所做四分之一圆弧所连成的曲线便是等角螺线。之所以叫做等角螺线，是因为螺线切线与螺线半径所形成的角是全等的。等角螺线存在于生物界，如左边的鹦鹉螺，如图 4，除此之外，还有雏菊花序，向日葵花盘等。

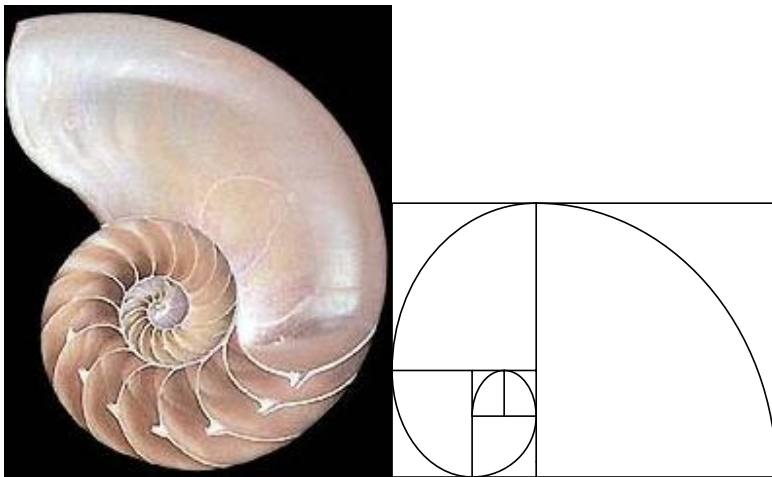
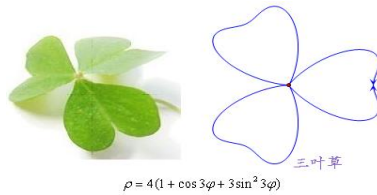


图 4

### 4.3 $\rho = 4(1 + \cos 3\varphi + 3\sin^2 3\varphi)$ 与三叶草



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## Research on the Construction of Computer Fundamental Curriculum Based on the CDIO Concept

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**Keywords:** Computer fundamental; Teaching mode; Curriculum reform; Project case; CDIO.

**Abstract.** At present, there are still many problems in the practice of computer fundamental education, such as attaching importance to theory, neglecting practice, ignoring the spirit of teamwork, and neglecting the cultivation of innovation. By introducing the CDIO model, reform the content of teaching as the breakthrough point, through the project case driven, computational thinking, leading the knowledge system of hierarchical and comprehensive training to improve the teaching quality, in order to cultivate students' independent learning ability and innovation practice ability.

## 基于 CDIO 理念的计算机基础课程建设研究

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**关键词:** 计算机基础; 教学模式; 课程改革; 项目案例; CDIO

**中文摘要.** 目前计算机基础教育实践中还存在不少问题, 如重理论轻实践、忽视团队协作精神、轻视开拓创新的培养等问题。通过引入 CDIO 模式, 以教学内容改革为切入点, 通过项目案例驱动、计算思维主导、知识体系层次化和综合实训培养, 提高教学质量, 进而培养学生自主学习的能力和创新能力。随着高等教育的不断发展, 大学计算机基础教学倡导与专业教育的逐步融合, 强调对大学生信息素养的培养, 使他们能够学以致用, 具备利用计算机分析、解决问题的能力, 在培养和锻炼大学生计算思维能力、专业应用能力等方面起着重要的作用。

### 1. 大学计算机基础教学的现状分析

大学计算机基础是非计算机专业学生的一门基础课程, 具有很强的应用性和实践性, 通过该课程的系统学习, 使学生能够掌握计算机的基本操作, 熟练地使用操作系统和办公自动化软件, 学会对计算机进行软硬件的安装维护, 培养和锻炼大学生计算思维能力, 提高学生的

信息素养,为学生在今后各自的专业领域中,能合理使用计算机这一现代化工具解决专业实际问题的能力。

但多年的教学经验表明,多数学生通过该课程的学习并未达到预期的效果,究其原因,《大学计算机基础》课程教学普遍存在以下几个问题:

(1) 教学内容滞后,课时偏少,教学内容不仅涉及到计算机基本原理、网络基础知识等理论,还涉及 Windows 操作系统、Office 办公软件和网络工具应用等具体操作,还应掌握程序设计思想,教学内容较多,学时相对较少。另一方面,大部分高校教学采用的办公软件还采用的是 Office 2007,编程语言采用是简单的 VB 6,与当前移动互联网技术相差甚远;

(2) 教学方式、教学手段落后,学生基础参差不齐,专业要求有高有低,大部分高校还在采用传统的“以教师为中心”的教学模式,不能体现学生、专业的差异,不适合学生自主学习,不利于计算机实际技能的培养;

(3) 考核方式采用传统的试卷考核方法,不能真正体现学生计算机基础应用能力,只注重知识灌输,不注重能力开发,偏重死记硬背,忽略动手能力培养;

(4) 实践环节多以验证性实验为主,创新性和设计性实验很少或几乎没有,课程与现实实践联系较少,学生团队协作能力培养不足;

(5) 学生存在畏难情绪,由于大学计算机基础对于学生的基础有一定的要求,而医学生对计算机及算法的理解力相对较差,并且多数学生在学习该门课程前对计算机语言一无所知,因此,学生在学习过程中普遍存在畏难心理,容易失去学习的兴趣和信心,直接影响了课程的教学效果;

(6) 学生对课程目标认识不足,学生认为他们是医学生,走上工作岗位以后不需要进行软件开发,学习程序设计对他们没有用,因此学习兴趣不浓,积极性不高,在学习过程中不愿意主动思考,遇到问题缺乏解决问题的意识,上机实践只是被动地模仿练习,谈不上计算思维的锻炼和设计能力的培养,很难达到预期的教学目标。

因此,针对目前教学中存在的问题,在计算机基础课程中引入 CDIO 工程模式,提升学生的创新能力、综合设计能力和团队协作能力,对于提高课程教学质量,培养动手能力有着积极的意义[1]。

## 2. 大学计算机基础课程引入 CDIO 模式的必要性

CDIO 工程教育模式是近年来国际工程教育改革的最新成果,CDIO 工程教育模式是由麻省理工学院和瑞典皇家工学院等四所大学 2004 年创立的工程教育理念,它以一种系统、宏观的视角来培养工程人才,目前已经成为国际工程教育的通用模式,具有实践可操作性、全面系统性、广泛适应性等特点。CDIO 分别代表构思(Conceive)、设计(Design)、实现(Implement)和运作(Operate),它以产品研发到产品运行的生命周期为载体,让学生以主动实践课程之间有机联系的方式学习,改变了以往重理论轻实践、重个人学科能力轻团队协作精神的弊端,倡导“做中学”和“基于项目教育和学习”的新型教育模式[2]。

迄今为止,已有几十所世界著名大学加入了 CDIO 组织,近年来,我国有大约 60 所高校进行 CDIO 模式试点。各高校采用 CDIO 教育理念和教学大纲,取得了良好效果,按 CDIO 模式培养的学生深受社会与企业欢迎。

对于我校大学计算机基础教育而言,在 2010 年进行了教学改革,加入了自主学习和网络辅助教学,在一定程度上调动了学生的自主能动性,但改革力度还不够大。在教学过程中,学生仍以二级通过为学习目标,而对于学生自身信息素养的提高并没有起到显著作用,这对于医学生的职业生涯可持续发展是不利的,因此,本文提出引入 CDIO 理念对计算机基础课程教学进行研究,期望利用课程中心平台资源的建设,打破以往学生被动学习,精品课程网站无人访问的僵局,使学生由课上学习转变为课下学习,被动学习转变为主动学习,从而实现学生自身计算机能力的进一步提高。

### 3. 基于 CDIO 模式的大学计算机基础教学探索

按照 CDIO 的教育理念,大学计算机基础的课程目标可分为四部分:知识目标、能力目标、情感目标、素质目标。在教学实践中,我们紧紧围绕课程目标的这四个层次,把案例和项目融入 CDIO 的实施和运行环节。

#### 3.1 强化师资队伍建设

转变教师传统教学思维和观念,教师通过参加全国高校教师网络培训、进修等,了解国内外先进的教学理念、教学方法以及先进的教学内容等。CDIO 理念要求我们在改革教学的同时还必须注重教师专业水平的提升,要保证指导学生在完成课程项目的过程中合理利用时间,合理分工合作,定期交流项目完成心得,分享各组的学习和实践成果等。这就要求教师必须不断扩充专业知识,提高综合素质,主动把握计算机知识的最新动态,将知识应用于实践,研究“以项目为导向”和“做中学”的教学规律,并不断地实践和完善它[3]。

#### 3.2 教学手段全新化

建设围绕“教师教学”和“学生学习”两个中心进行课程建设[4]。

(1) 课件及教案建设;

(2) 项目案例建设;

(3) 实验环境建设:包括考试软件、实验软件以及实验教学环境的建设。

(4) 课程中心建设:以学校课程中心网为平台,创建大学计算机基础课程中心,通过建设“教学资源”、“项目实训”、“视频教学”、“作业及测验”,“辅导答疑”、“交流互动”等栏目;

(5) 机房开放:我校自主学习中心机房为学生免费开放,每天有授课老师和实验老师值班,面对面进行指导、辅导答疑。

#### 3.3 以项目为导向

“以项目为导向”要求在教学过程中,以完成具体项目为线索,把教学内容巧妙地隐含在每个项目中,将“做中学”的教学模式贯穿到课程教学中。

根据本门课程的特点,综合计算机基本操作和 Office 组件在工作岗位中的实际应用,以课程教学目标为依据来设计项目,经过筛选和分析,整理为课程的各级项目。搜集各种经典案例,编辑整理出以下五大模块,使得学生学习、能力训练具有目的性[5]。

(1) “计算机基础”模块:以基本操作训练为主,包括计算机基础理论、Windows 操作系统等。

(2) “办公软件”模块:以技能训练为主,包括文字处理 Word、电子表格处理 Excel、演示文稿 PowerPoint 等。

(3) “计算机网络”模块:以网络应用训练为主,同时培养学生信息素养和网络伦理意识,包括网络的配置与常用网络应用软件的使用等。

(4) “计算机维护”模块:以信息安全、软硬件维护为主,包括计算机软、硬件的维护、信息安全等。

(5) “程序设计”模块:针对有程序设计语言类二级考试需求的学生,进行专项训练,包括常用软件开发、使用等。

教师在学生完成项目的过程中引导学生总结本项目用到的知识点和各自的收获,对整个项目的构思、设计、实施、运行过程进行梳理,并进行点评。

#### 3.4 以学生为中心的分组式教学

“以学生为中心”这种教学理念强调学生的学习主体地位,学生通过独立分析问题、探索知识、实践操作、提出质疑等方法来达到学习目标,从被动接受知识技能到主动探求知识

技能,教师从单纯地传授知识到设计、组织、指导教学活动。以一个完整的项目案例为驱动,以 CDIO 教学模式为指导,将 CDIO 的四个阶段有机地融入项目案例中[6]。

(1) 构思:学生先对案例的背景进行分析,提出问题解决的可行性以及可能遇到的问题,提炼出案例问题的功能要求,写出必要的文档资料;

(2) 设计:根据案例需求,设计出最优的解决步骤以及实现办法;

(3) 实现:根据设计的步骤,运用所学知识完成该案例。

(4) 运行:根据评价结果及反馈,对案例进行修改和完善。

同时,我们在教学过程中采用“分组式”方法,将学生进行分组,让学生以小组团队的方式共同学习、讨论和交流、协商和辩论,互相配合完成项目,以小组团队的方式进行项目考核答辩,团队内部成员统一计分、共同进退等。通过小组成员间的合作交流培养学生的合作与沟通能力、培养团队意识,通过小组间的竞争激发学生的创新潜能。

### 3.5 多元化考核

“以项目为导向”的教学目标是培养学生的实践和创新能力,而在课程考核中也应该制定基于项目完成效果的、多元化的、科学的评价标准[7]。

(1) “课堂教学”数据统计:学习态度、出勤率、提交作业情况等;

(2) “网络教学”数据统计:如课程中心自学时间,参与互动次数等;

(3) 模块化测试:利用上机考试软件,在网络上进行分批次、分模块考核。学生可以在机房随时多次参加考试,将最高分计入平时测试成绩;

(4) 期末测试:将原有机考的操作题比重提高,减少客观题比重,真正考核学生的动手操作能力。

## 4. 结语

基于 CDIO 理念的计算机基础课程建设,通过选取专业相关项目案例,有利于激发学生的兴趣,使学生由被动式学习转变为主动式学习。通过弱化二级考试的应试教育,加大 Office 在医学中的高级应用,提升医学生的信息素养,对于医学生的职业生涯的可持续发展是非常有利的。通过构建大学计算机基础课程中心,能够实现教师与学生的交流与互动,网上答疑、发布教学消息等;实现优秀资源共享,包括教师的课堂课件、问题资源库、习题、优秀资源链接等。通过网上交流、网上答疑,资源共享等,扩展教学的时间、空间,不但有助于教师教学质量的提高,更有助于提高培养学生的自主学习和创新能力。

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## A Study on the Piano Music of the Five Yunnan Folk Songs

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**Keywords:** The five Yunnan folk songs; Artistic creation; National features; Combination.

**Abstract.** The folk music presents its characteristics of diversification and clustering in the music research. With the cultural pursuit and modern people's yearning for pure things, folk music has gradually emerged before the public. It provides extremely rich nutrients for other types of music, with plenty of direct materials for the recreation of art. And Yunnan folk music is rich in connotation, with a long history and unique characteristics. From the perspective of music creation, Yunnan folk music is based on the local cultural and natural scenery, customs and practices. Taking the piano music of the Five Yunnan Folk Songs as the research object, this paper aims at analyzing characteristics and artistic style of Yunnan folk songs, and researching the artistic charming when national music and western music combine together and traditional music mixes with modern music.

## 钢琴曲《云南民歌五首》的创作研究

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**关键词:** 云南民歌五首; 艺术创造; 民族特色; 融合

**中文摘要.** 民间音乐在音乐研究中呈现出一种多样化、集聚性的特点。随着社会文化心理的回归以及现代人们对于朴素纯静事物的向往, 民间音乐也逐渐出现在大众的视野。民间音乐为其他类型的音乐提供了极其丰富的养分, 为艺术的再创造提供了更多直接的材料。云南民间音乐内涵丰富, 历史悠久, 特点鲜明。从音乐创造的角度分析, 云南民间音乐的创作取材于云南当地的风土人情、人文风华以及自然风光。本文以钢琴曲《云南民歌五首》作为研究对象, 分析云南民歌的创作特色以及艺术风格, 同时分析民族音乐与西洋音乐相结合, 传统音乐与现代音乐融汇的艺术创造力。

### 1. 前言

音乐是一门雅俗共赏的艺术。在音乐史上, 民族音乐一直以来都是一个重要的部分, 如果没有民族音乐, 音乐的多样性也会大大减弱。民族音乐具有鲜明的特色, 在艺术的格调上, 民族音乐植根于劳动人民的生活中, 曲风清新、朴素、直白。民族音乐的创造并不是用高雅的音乐元素装点音乐, 而是将人们的情感融入音乐本身。云南民族音乐就有这样的特点。在内容上, 由于民族音乐接近的是普通的劳动人民, 反映的是劳动人民的喜怒哀乐, 更

重要的是，民族音乐题材广泛，不管是祖国的山川河流，还是身边的奇闻异事都可以作为音乐创作的源泉，创作素材和创作情感构成了云南民歌的独特性。这也是民族音乐的魅力所在。民族音乐也具有独特的表现力，浓郁的地域特色以及丰富多彩的创作源泉吸引了众多音乐爱好者的青睐。很多音乐研究者把云南民歌的创作作为研究的热点，这是因为从云南民歌中能够挖掘多角度、多层次的音乐性的材料。

由于音乐爱好者和研究者对云南民歌的热情和关注，一系列的改编曲层出不穷。很多音乐家将民族音乐的内在艺术风格与西方现代音乐的技艺有机结合。很多作曲家在吸收民歌艺术营养的同时也融合西方音乐创作理论，虽然音乐的曲风发生了很大的改变，但是仍然保留了民族音乐原始的淳朴以及自然的风格。而钢琴演奏的民歌不仅具有民族音乐的原始风味，更增添了许多现代性的音乐元素。这也是钢琴曲《云南民歌五首》的创作特点以及艺术魅力。以王建中改编的钢琴曲《云南民歌五首》为例，这组音乐曲风多样，但是都保持了清新的特点。其中有委婉动人的《大理姑娘》，有情谊真挚的《跟哥》，有明朗雅键的《猜调》，悠扬澎湃的《山歌》，也有欢乐浓浓的《龙灯调》。王建中将云南民歌的基调和音乐元素与钢琴的演奏特点相融汇，给人别具一格的感觉。

## 2. 《云南民歌五首》的音乐创作元素

### 2.1 自然的音乐与民歌的自然创作

长期以来，人们对于民歌的自然性认识停留在艺术风格上的理解，认为民歌的自然性是由于它的内容和呈现形式造成的。其实究其根本，民歌的自然性源于创造者的自然崇拜。民歌的创作者大多来自社会底层，大多是普通的劳动人民，劳动人民在劳动时也需要精神的愉悦，而音乐是使精神愉悦的最好办法。民歌往往就是在劳动人民与大自然亲密接触时创作出来的。大自然的财富非常巨大，大山大河、草木虫鱼、飞鸟走兽等等都能成为民歌创作者的灵感的源泉。音乐创作需要有源源不断的“活水”，这民歌创作的“活水”大部分都来自于大自然。云南保留了最原始的自然风光，拥有丰富多彩的自然界的音乐素材。自然界的音乐往往充满力量和感染力。自然界一些细小的声音都有可能被民歌创作者捕捉到。树上鸟儿呢喃也能启发创作者，这也都是民歌的音乐素材。因此，自然的音乐造就了云南民歌的自然性。当然，这种对大自然的借鉴和吸收，并不仅仅是将自然界的声音移植到民歌创作中，而是将民歌的创作与自然界的音乐原理相结合，在创作上的自然性从根本上导致了民歌的自然特性。

音乐创作的源泉来自于自然，来自于生活。但是，艺术本身并不能与生活对等，也不能与自然界的声音混同。云南民歌的自然性主要体现在清新脱俗的特点上，钢琴曲《云南民歌五首》在改编的思路能够保留民歌的原貌，但是在音乐演奏上，创新了音乐的表现形式，以《龙灯调》为例，这首音乐的主要内容是反映云南少数民族在节日中欢天喜地的热闹景象，人民群众在丰收之后享受着快乐和喜悦。这首音乐中出现了各种不同的乐器，喜庆的气氛非常浓烈。云南民歌的生活气息也是自然性的一个重要表现。民歌的乐器也大多借鉴自然中的声音源。比如口弦其实是一个欢乐性非常强的乐器，口弦的表现力非常丰富，它能够模仿人的声音，也能够模仿大自然中的风声、雷声、鸟叫声、流水声，还能够表现民间谚语，并且能够用音乐的语言诉说民间的故事。由此可见，创作的自然性对音乐的风格影响非常深刻。民歌在乐器的使用上也能够保留自然的声音，运用自然的乐器。

### 2.2 《云南民歌五首》的改编与风格的转变

很多作曲家对《云南民歌五首》都尝试着改编，不管是出于什么样的目的，民歌改编对民歌的风格都会有影响。王建中将《云南民歌五首》改编成钢琴曲，并且产生了非常深远的影响。《龙灯调》在原始的民歌创作阶段主要采用民族传统的乐器锣鼓、口弦等更具有自然特性的简单的乐器。在很多民歌中，并没有精致的乐器，往往是非常简单的工具。有的甚至

用树叶、竹管作为音乐演奏的器具。木鼓、羊皮鼓、锣等简单朴素的乐器是民歌最主要的演奏工具。因为，在比较原始的民族风俗中，人们最常用的就是锣鼓，很多民族用锣鼓进行交流，用锣鼓驱除猛兽，也用锣鼓创造音乐。民歌的自然朴素的特性离不开乐器的独特表现力。

然而，作曲家用钢琴来演奏民歌，民歌的原始风格发生改变。作曲家在民歌中融入新的东西，融入自己对音乐的独特理解，同时也将新的音乐元素带到民歌中。因此，钢琴曲《云南民歌五首》给人一种新鲜的感觉。王建中经常使用和声配调，在他改编的钢琴曲《大理姑娘》中，他将音乐的结构改变成重叠型，这首曲子的结构如下：



改编曲中，A段的音乐元素更偏向于以民歌的演奏方法来表现，在音乐演奏形式上对民歌的借鉴非常明显，此外，还将民歌的音乐特性融入到新改编的曲子中，这样就尽可能多地保留了民歌的原始性，但是改编曲的特点在于它不仅拥有民歌的原有内涵，而且将民歌的自然性纳入到新的演奏体系中。在A段，“反调式”成为这首曲子的主要采用方法，和声配置运用这种方法，主和弦以d作为基调，并且运用音调交叉的方法调动音乐的活力，和弦就成为交替式，多种弦音的交互使用使得这首曲子更富有生机，同时也使得和声更加浓郁。这种谱曲的方式在王建中的其他作品中也常见到，这也是作曲家的一个特色。当然，乐曲改变还要根据音乐表现的需要，钢琴曲在再创造的同时也能够保留原曲的民族特色和淳朴的音乐基调，这是作曲家有意识地将新的音乐元素与传统的民族性的音乐元素将融合，并且取得了良好的效果。以下是部分图谱：



钢琴曲对原来的民歌的改编在风格上的体现就是将音乐的原始情调变得更加灵活，更加浓烈。作曲家将小二度的和声融入音乐的语境中，改变了原有的音乐语调，钢琴演奏时能够将模仿性的音乐转变成抽象性的音乐，音乐的表现更加含蓄委婉，同时在音乐效果上也不同于原始的民歌，作曲家有用和声中的三度叠置表现人物欢乐的心情，场面也变得更加开阔，视野也变得更加辽阔，音域也更广。这就是钢琴曲在原作基础上进行再创作之后的新的音乐特性。

### 3. 钢琴曲《云南民歌五首》的艺术特色

#### 3.1 浓郁的民族特色和生活气息

云南是一个少数民族众多的省份，各少数民族有其独特的生活特征，他们的生活环境也富有民族特点，民族的思维和爱好也比较独特。很多少数民族对歌舞情有独钟，他们喜爱各种形式的歌舞，也喜欢模仿大自然，喜欢模仿身边的事物。对于少数民族而言，歌舞是表达情绪和思想的最好办法。云南处于我国的边境，地理位置独特，有很多丰富的自然和人文资源，多样化的环境使得云南更具有神秘性，少数民族对自己身边的事物进行观察，将自己身边发生的事情用歌曲的形式表现出来。云南少数民族的生活水平相对落后，受到现代文明的冲击也比较小，这就导致云南当地的少数民族能够保留更多的民族特性，他们创作的歌曲也



就更具有民族特色。云南的地形主要是以山地高原为主，地势崎岖，人与人之间交流不便，云南当地少数民族喜欢对唱山歌，这是云南当地人们的习俗，对唱山歌的形式也能够激发人们的想象力和创造力，将自己的情感融入到音乐之中。

歌曲是用来抒发人的情感的，由于云南少数民族的生活环境。生活习俗、自然条件比较独特，云南民歌也呈现出一种节奏多变，声调高亢的曲风。当然，对唱山歌的形式是云南当地人民的一种独特的抒情方式。山歌的内容一般都是表现男女之间的钦慕之情，这类歌曲就表现出曲折婉转的特点，当然，也有些山歌情谊浓烈，热情奔放，明朗豪放。傣族有很多对唱山歌的活动，这种有组织的男女传情的活动对傣族的青年吸引非常大，很多人对唱山歌都像是即兴表演，歌词和曲调有时候要自己创造，这就大大激发了人们创作歌曲的积极性，同时也丰富了云南民歌的类型和数量。《云南民歌五首》中的《山歌》就富有浓郁的民族特色，同时也表现了浓郁的生活气息。《山歌》的创作特色主要体现在它的音乐再现特色上。《山歌》的部分图谱如下：



《山歌》的表现力主要体现在它运用广阔的音域表现大山深处的情景，高音调和低音调分别表示青年男女对唱山歌的不同心情和环境变化。演奏者同时用左手和右手的交换弹奏加快主旋律的变化。二分音符和四分音符的附点改变了音乐的原始走向。音调更加灵动，表现少数民族青年男女那种纯真的恋情以及质朴的情谊。钢琴曲把乐曲的原有速度加快了(=116)，每个小节都互相呼应，暗含了云南少数民族对唱山歌的男女唱和的场景。

### 3.2 音乐旋律的转变和谱统一，具有冲击力

研究和总结音乐艺术特色，对我们理解钢琴曲《云南民歌五首》有非常大的帮助。我们既要理解云南民歌原始创作的背景和特色，也要把握作曲家改变之后的曲调特点，音乐的表现特色以及音乐独特的感染力。云南很多民歌运用简单明了的表现手法体现个人的情感变化和生活情景。云南民歌容易激发人们对简单原始的声音的渴望，在激愤慷慨的音乐旋律中把自己带入到一个非常陌生而又熟悉的环境，音乐的感染力超过原始的旷野。而钢琴曲在保留民族特色的同时也挖掘出新的音乐元素。比如钢琴曲《白族夜歌》融汇了云南少数民族的民歌旋律，将云南奇幻的山川风景融入到音乐的旋律中，草木虫鱼、飞鸟走兽在这首曲子中也活灵活现地表现出来。《白族夜歌》的部分图谱如下：



分析这类曲子我们可以发现，钢琴曲《云南民歌五首》中的音乐旋律的转变和谐统一，具有冲击力。钢琴曲采用跳跃的音乐旋律，多种音调融合在一节，变奏的音乐手法，重叠的结构形式结合反调的音乐手法，音乐的节拍、音区、音频和音乐的情调和谐统一，音乐的冲击力更强。第一节的二分音符和四分音符的复附点塑造了音乐的整体性。增强了音乐的整体性。在音乐的前奏和尾声阶段，“反调式”的音乐表现手法使得音乐的旋律更具有冲击力，和声配置运用这种方法，音乐的基调结合和弦的配置，和声的音调交叉，音调的灵活性更强，和弦就成为交替式，多种弦音的交互使用使得这首曲子更富有生机，同时也使得音乐的感染力更强。

#### 4. 小结

《云南民歌五首》富含民族特色。很多作曲家和研究者对《云南民歌五首》进行再创造，将现代音乐理论的西方乐器与传统的民族音乐有机融合。民族音乐的的特性源于音乐创作的独特性。很多人认为音乐的自然性源于音乐内容的特点，而根本原因是创作的自然性，少数民族将音乐创作融入到生活和自然中。现代作曲家将民族歌曲进行改编，融入自己对民歌的理解，将民族音乐的清新特色与现代乐器的感染力融汇，在音乐的表现力上，整体性和音乐节奏的和谐性是民歌创作一个重要的艺术特点。音乐创造的独特性一直以来都受到人们的关注，民族音乐的感染力在于音乐的朴素和情感的真挚，民族音乐反映的是劳动人民的生活和趣味。随着民族音乐的风潮兴起，民族音乐涉及的范围越来越广泛，民族音乐的创作理念也发生了巨大的变化。总而言之，通过分析和研究钢琴曲《云南民歌五首》，我们发现钢琴改编民族音乐既能保留民歌的原始特点，同时又能挖掘新的音乐元素。

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## A Study on How to Express Emotional Experiences in the Singing of National Vocal Music

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**Keywords:** National vocal music; Sing; Emotion.

**Abstract.** The essence of national vocal music is to further express the psychological state of the characters in a certain stage of their growth process through the voice of the singer. In the process of expression, the singer must pay attention to the connection with the audience's senses, by injecting their own feelings in songs to guide the audience into their inner world and finally get an emotional resonance and interaction. With appropriate environment, the audience's reception level must be considered to make them fully understand the true meaning of the song and communicate with the singer spiritually. Literally, music is to enjoy the audience spiritually through the corresponding voice, and to "enjoy" is not only to let the audience feel happy, but also to edify them to enjoy the beauty. The connotation of the work itself and the singer's own understanding and emotion can be expressed in the process of singing, if some singing skills are used. This paper introduces the essence of national vocal music briefly at first, then explains the importance of emotional expression, and finally concludes some specific measures to show one's emotion through the analysis of the national vocal music and the author's own singing experience.

## 如何处理民族声乐演唱中的情感问题

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**关键词:** 民族声乐; 演唱; 情感

**中文摘要.** 民族声乐演唱的实质就是借助演唱者的声音进一步表达出人物在其成长历程中某一阶段、某一环境的心理状况。而在表达的过程中, 必须要注重与受众人群的感官进行交融, 通过在歌曲演唱之中注入自己的情感, 引导他们进入自己的内心世界, 最终达成情感的共鸣与交织。但是在表述自身情感的时候, 必须要注重受众人群接收情况, 还需要结合当下的环境氛围表达出适当的情感, 进而促使他们能够充分理解歌曲的真正含义, 进一步加强演唱者与听众间精神层面上的交流。就音乐的字面意思来理解, 也就是通过相应的声音给以听众精神上的享受, 而“乐”的实质不光是让听众感到快乐, 更为重要的让他们的感官都能够受到音乐的熏陶, 进而得到美的享受。如果要在民族声乐演唱过程中要充分表达出作品本身的含义与演唱者自身的理解与情感, 就必须掌握一定的演唱技巧。本论文首先对民族声乐的实质进行了简要分析, 进而对情感表达的重要性进行了说明, 最终通过对民族声乐的分析并结合自身的演唱经验进一步给出如何表达自身情感的具体方案。

## 1. 引言

音乐是一门雅俗共赏的艺术，它能够直接对人们的内心产生一定的冲击，可以在很大程度上提升人们的艺术修养。民族声乐是我国传统艺术的一大组成部分，其演唱目的也就是通过歌声来表达出作品以及演唱者的情感，它是我国传统音乐文化中传承下来的一大精粹。在现今全球一体化的大背景之下，我国的民族声乐充分借鉴了国外声乐艺术中的精华部分，对传统的演唱模式进行了一定的革新，并且还在很大程度上推动了我国声乐艺术的发展。如果要对民族声乐演唱中的情感融入进行细致的研究，就必须对其实质加以详细的认知。

## 2. 民族声乐情感表述的实质与特点

民族声乐艺术需要实现的目标就是通过演唱进一步表达出相应曲目与演唱者的内心感受，重点在于和台下的听众实现情感上的交融。而这一目标的实现在很大程度上受到了环境因素的影响，只有当下的环境氛围、演唱者表达的情感、曲目的实质含义以及观众的主观感受这四大要素具有高度的一致性，才有可能实现演唱者与受众人群精神层面上的交流。也就是说，民族声乐情感的表达主要依赖于演唱者对于当下环境氛围与听众精神层面状况的精准把控。民族声乐的各种不同演唱形式都只是表达情感的一种手段，而借助这些手段实现对当下社会背景、时代现状、人物心理、情感状况的把控才是民族声乐演唱的实质。民族声乐与其他的音乐表达形式有着较大的区别，它的先决条件就是培养出具有较强感染力的歌声，进而表达出自身情感，万不可为追求舞台的震撼就盲目的增加灯光效果、乐器类别等，不然就是舍本逐末。另外，由此也可以看出民族声乐艺术的难度，它与其他音乐表现形式有着直接的差别，例如钢琴、吉他等，这些乐器的演奏效果在很大程度上受到了乐器制造水平的影响，这一因素很难被演唱者所控制，也就是说性能良好的乐器能够在很大程度上给以相应音乐人的表演提供一定的帮助，而民族声乐演唱这主要考验的是演唱者的音乐素养与对表演现场的把控能力，有着专属于它自身的审美标准。

民族声乐在音色、音韵、意境上都有着极为鲜明的特点。就其音色而言，民族声乐要求演唱者必须要吐字清晰，唱音标准，同时还引入了我国传统戏曲的一些演唱技巧。表演者只有实现了上述标准才可能实现声音强调的精准、圆润，其音色要求清新、自然，具有较强的感染力。其次民族声乐的音韵极为优美，每一句歌词的演唱都有着其独特的韵味，能够将自身的情感与观众的内心世界加以连接，把作品的歌词为表演的骨架，将韵律当作是演唱的灵魂，除此之外还充分运用了多种演唱的技巧，进一步将自身的情感表达的淋漓尽致。另外民族声乐作品的立意大都极为深远，对于演唱者有着极高的标准，必须要能够给听众以丰富的想象空间，最终通过表演者的演唱实现表达民族声乐作品情感的目的。

## 3. 民族声乐演唱中情感表达的意义

人类是高等动物，也就是说人不仅仅是具有一定的智慧，还有较强的学习能力与浓厚的情感，民族声乐艺术来源与我们的生活，因此也就不可能脱离情感的表达。民族声乐的演唱往往是为了表述出某一些不够具象的意境，例如哀伤忧愁、喜悦兴奋、思念愁苦等，这一意境难以通过言语进行详细的表述，因此必须通过情感来加以表达，可类比于绘画过程中色彩的运用；舞蹈表演中对于音乐节奏的掌控等。那么不禁要问民族声乐的表演怎样让观众接收到演唱者所希望传递出来的情感？这或许就设计到了生理学以及物理学的知识，人的声音是一种波，具有一定的震动频率，而人通过耳膜的震动就能够将这中波传递给大脑，借助大脑无意识的分析进而与自身的成长历程、情感现状等加以融合，进一步产生内心的共鸣，另外借此也能够得出，由于每个人都具有不同的人生经历与情感现状，因此大脑在进行分析的过程中往往也会产生不同的感官，给人以不同的感受。

民族声乐表演过程中的情感表达可以说为演唱者与受众人群之间架起了一道能够进行精神交流的桥梁,进而可以充分展示出作品的表现力与演唱者的音乐功底。例如,在情绪高昂的时候,可以通过较高频率的声音来进行演唱,而在心情低沉的时候,可以通过低音来进行表达,这是民族声乐演唱的基本要求,但是在实际演唱的过程中,还必须符合作品的整体基调,不能因为追求每一段的表现而忽视了作品的原定氛围,必须要确保演唱的连贯性与整体性。演唱者通过对作品情感与自身情感的表达可以进一步召唤出听众内心所隐藏的情感,进而与本身的情感交织在一起,这不仅仅能够营造出作品表演所需要的氛围,还能够进一步体现出民族声乐是心灵的声音。

在民族声乐演唱中注入情感能够进一步展现出其作品的影响力,进一步展现出它独特的魅力。如果在声乐演唱中缺少了情感,那么就仿佛一杯平淡无奇的白水,不管所使用的技巧多么高潮,舞台布景多么华丽,声音多么震撼也只不过是把这杯白水变得沸腾而已,终究没有令人难忘的味道。在作品中融入自己的情感能够促使自身融入到作曲者所处的时代背景中,进一步去感受作者当时的所思所想,借此能够充分掌控作品的感情基调,再借助自身的想象与情感注入,在原有的基础之上对作品加以创新,融入当下的时代特点。这更加符合当代观众的审美观念,也能够为观众们营造一个更加具有时代特点、符合当今社会现状的意境。

#### 4. 处理好民族声乐唱法中情感问题的具体方案

##### 4.1 必须充分掌握民族声乐基本的演唱技巧

民族声乐唱法中的呼吸方式有着一定技巧,表演者必须通过对呼吸的调整将自身的情感注入到歌声之中,并且通过对曲目对情感的实际要求,进一步完成对气息调节的修正。另外,伴随着曲目节奏的变换,在选择呼吸方式的过程中,还需要对各种呼吸方式进行灵活转变。民族声乐的句读主要通过曲目的节奏、曲调、歌词、感情等加以完成,在现场演唱的时候必须要选取合理的呼吸方法,选择在适当的断句时机完成相应的换气流程,同时在高低音转换的时候,更需要注意选择合理的呼吸方式。民族声乐通常是由多段歌唱所组成的,每一句歌词的字数都存在一定的差别。民族声乐曲目的形成大多都有着浓厚的历史文化积淀,而作者在创作的过程中不光是融入了自身的情感,还会对音调强弱的确定、曲目所构建的画面、渲染的感情基调等加以全盘的考校,因此通常情况下,演唱者需要尽可能的尊重原著,按照曲目本来的断句方式进行演唱,不可以根据自己的喜好而随意的进行句读。总而言之,合理的呼吸方式能够尽可能的保障歌曲演唱的连续性,它能够保证演唱过程中发声技巧、吐词节奏的合理性。然而,如果由于表演者的气息不足而导致的呼吸技巧运用不当以及句读的不合理,这就是由于演唱者的演唱基础存在的问题,所以必须要进一步加强基本功的练习。

其次还需要正确的把控演唱的节奏,节奏之于民族声乐曲目类比为人类的脉搏,声乐曲目演唱的过程中,必须要保障节奏的合理安排,不应该有着自己的喜好加以随意改变。必须要满足演唱虽快、不抢节奏;演唱虽慢、不显拖沓的基本要求。任意一首民族声乐的曲目都有着其独特的节奏特征。除此之外,还必须尽可能对自己的音色加以适当的调整。可以说音色能够在很大程度上决定曲目情感的精准定位,而风格各异的曲目必须要配上与之相关的音色,所以演唱者必须要提高自己的跨界演唱能力,进一步对自己的音色加以合理的修整。而在对音色进行修整的时候,需要充分结合歌曲的主题,按照情感投入情况借助合理的音色调控手段进一步唱出更加适合于歌曲基调的声音。另外由于演唱者不同的心理状况也会对自身的音色造成直接的影响,所以在实际演唱的时候必须要对自己的状态加以调整,保证演唱者的内心、思维能够一直符合民族声乐歌曲的感情基调,进一步确保演唱的实际效果。

##### 4.2 充分掌握民族声乐演唱和情感表达之间的联系

首先必须要实现声音与感情的融合。也就是说必须要充分了解歌曲的感情基调与时代环境,当自己代入到作曲者所处的年代中,进一步深入发掘出作者的心理状况与注入的情感,

尽可能将以往的时代风格与当下的社会现状进行有机结合，最后在尊重原著的基础之上加入自身对于民族声乐歌曲的理解。另外还必须对一些特殊的情感加以详细分析，对每一首作品的情感转折、起伏等状况加以研究，还必须对细节加以关注，做到演唱过程浓淡适宜，情感波动引人瞩目。与此同时，还必须尽可能的发挥自身的想象能力，可以说想象力是促进一门艺术不断发展的重要作用条件，它能够让各种艺术形象更为生动、自然。而民族声乐作为音乐与语言高度协调的一种重要的艺术形式，它可以为参与者构建起一个极为生动的精神环境，也就是我们所说的通常意义上的意境。针对这一条件，民族声乐表演者必须尽可能提高自己的想象能力，在演唱的过程中通过自己的合理引导，为参与者营造出一个较为自然、合理的歌曲意境。除此之外，演唱者还必须在理解民族声乐作品曲目的基础之上进一步提高自己以字行腔的能力，也就是说歌曲的演唱必须要字正腔圆。除此之外，还需要对作者的作词作曲风格加以了解，对他们一贯所营造的环境条件加以详细的认知，进而借助对他们的了解在作品中合理的引入一些自己的风格。作为演唱者，必须分别从生活与民族声乐作品这两大方面去提高自己在声乐演唱过程情感注入的掌控能力，进而为自己音乐素养的提升打下坚实的基础，进一步将歌声与感情有机的结合在一起。

其次还必须对民族声乐的发声技巧加以精准的掌控，另外还必须要充分结合作品的内容。演唱者在对作品的内容进行展现的同时必须要借助一定的发声方式实现作品内容和情感的和谐统一，进而能够更加有力的展现出歌曲的思想感情。民族声乐发声技巧的掌握必须要具备清楚吐词、喉咙平稳的前提条件，另外在对民族声乐感情进行深入发掘的过程中，还必须要保证所演唱的作品的民族特性，必须要能够融入进自己的感情。所以就需要对各个民族的生活习俗、风俗特点等加以详细了解，对他们的情感表述模式进行深入的研究，最后对相关民族的文化特点与历史积淀加以分析。与此同时，还必须对作曲者的创作条件与意图进行推测，最后从精神层面上构建起一次穿越时空的交流，进而将这份感情传递给观众。另外还需要对创作人员的风格加以详细的了解，进而表达出作品的鲜明个性与情感。另外还必须对感情的融入过程进行细致化处理，进而保证在演唱的时候能够充分调动自己的感情，唤起内心深处最为真挚的情感，以真心完成相应的表演过程，确保投入感情的真实。同时还需要保持自身在舞台上的仪态，通过合理的站立姿势为发声技巧的运用提供一定的保障。最后，还必须尽可能的提升自己的民族声乐信仰，增进自己对于各类风格音乐的理解程度，最终保证演唱歌曲意境的生动、形象。由于我国的文化历史源远流长，民族声乐艺术在曾经的发展历程中已经有了较大的进步，但是我们不能因为现今所取得的成就就产生一定的自满情绪，必须要更加注重在演唱过程中情感的投入，并且加强与西方一些具有鲜明地方特色的音乐的交流，进一步对自身的审美水平加以提升，最终达到推动我国声乐艺术事业良性发展的目的。

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