Scholar Publishing Group
International Journal of Multimedia Computing
https://doi.org/10.38007/IJMC.2022.030101
ISSN 2789-7168 Vol. 3, Issue 1: 1-7

Development of Innovative Entrepreneurial Talent Training Model in Regional Economy Based on Big Data Analysis

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Keywords: Big Data Technology, Talent Training, Innovative Entrepreneurial Talent, Regional Economy

Abstract: With the rapid development and replacement of various high and new technologies, it has become a consensus to use big data (BD) technology in the exploration of talent training mode. Analyzing the characteristics of regional economy, establishing the talent training direction with innovative thinking, upgrading the education mode, and forming a multi-mode combination of BD processing practice teaching mode. Mastering Internet means and information technology has become an essential skill of current talent cultivation. As high-end talents, innovation and entrepreneurship (IAE) ability is an important skill that can greatly improve productivity. This paper explores the necessity of BD analysis of IAE Talent Training Mode in regional economy, and studies the specific training strategy in detail. This paper uses BD to collect the relevant data of the impact of IAE talents on regional economy, and uses the commonly used data visualization software Excel to generate charts, so as to explore the development of IAE talents training mode in regional economy. And in-depth explore the development countermeasures of innovative talents training mode in the regional economy.

1. Introduction

The word "BD (big data)" has gradually entered people's lives since 2012. As a new way of production and life, it is a great revolution for the society, BD will make profound changes all fields of society [1]. BD technology, which is most often exposed in daily life, is that when we use smart phones, we record and collect users' usage habits and optimize the application push messages. So that users have a "satisfactory" sense of use [2]. This is the characteristic of BD, which can collect a large amount of data, calculate in the cloud server, and then analyze the data required by the user.

According to this analysis, the results are very accurate for most people, because it is based on massive data targeted receipt analysis, for different audiences to make targeted needs analysis [3].

Regional economy refers to a special economic development mode that makes special policies according to the situation of a specific region. The initial cause of regional economy is due to the different division of labor caused by the different production capacity of different regions. In the long-term social production and living activities, due to geography, climate, religious belief and other factors, the inherent economic relationship has gradually formed between regions with frequent economic activities [4]. The development of each regional economy is restricted by natural conditions, social and environmental conditions and other factors. Therefore, in the economic development must have the pertinence adjustment development policy, therefore the regional economy came into being the [5]. The good development of regional economy shows the objective law of economic development, so in order to better develop the national economy, the state abides by the objective law of development, establishes many comprehensive local economic experimental zones, and brings good development results [6-7].

National talent reserve has always been a great and important cause that a country should always adhere to. Obviously, the cultivation of innovative and entrepreneurial talents(IAET) has always been an issue that the state attaches importance to, as can be seen from the various talent cultivation policies issued by the state [8]. Regional economy is an important part of the national economy, so the cultivation of IAET in regional economy is also very important. Because the regional economic development has strong regional characteristics, it is necessary to fully combine and give play to the local regional characteristics in order to better develop the regional economy. The training of IAE talents in regional economy is also the same. It is necessary to combine with the local development needs to explore a better talent training mode. BD technology has a strong ability of targeted analysis, and can better explore the targeted entrepreneurship and innovation talent training mode of regional economy [9-10].

2. Method

2.1. Particle Swarm Optimization Algorithm

Optimization is an important part of scientific research, engineering skills and economic management. The question it discusses is to find the best plan among many plans. In every category of human activities, there are many such people. Optimizing this skill is to provide theoretical basis and solutions for the handling of these questions. Using BD technology to analyze the development characteristics of regional economy, to find the optimal solution in the region, in order to find the best talent development and training mode in the regional economy, is inseparable from the support of this algorithm.

Initialize to a group of random solutions. And then through constant replacement. In each replacement, the particles update by tracking two pbest (gbest). The particle updates its speed and position with the following formula.

$$v_i = v_i + c_1 \times \text{rand}() \times (\text{pbest}_i - x_i) + c_2 \times \text{rand}() \times (\text{gbest}_i - x_i) \quad (1)$$

$$x_i = x_i + v_i \quad (2)$$

In formula (1) and (2), i= 1, 2 , N, n is the total number of particles in this group.

v_i is the velocity of the particle

Rand(): a random number between $(0, 1)$

x_i is the current position of the particle

c_1 and c_2 is a learning factor, usually $c_1 = c_2 = 2$

v_i The maximum value of I is V_{max} (greater than 0), if v_i is greater than V_{max}, then v_i=V_{max} Formulas (1) and (2) are standard forms of PSO

$$v_i = \omega \times v_i + c_1 \times rand() \times (pbest_i - x_i) + c_2 \times rand() \times (gbest_i - x_i) \quad (3)$$

It's called the negative inertia factor, Omega.

At present, linear decreasing weight strategy is widely used.

$$\omega^{(t)} = (\omega_{ini} - \omega_{gnd})(G_k + g) / \ G_k + \omega_{gnd} \quad (4)$$

In addition, the common formula of ω is linear decreasing weight, and the formula of ω changing with K is as follows:

$$\omega = \omega_{max} - k \times \frac{\omega_{max} - \omega_{min}}{N_{iter}} \quad (5)$$

Where, ω_{max},ω_{min} is the maximum and minimum of ω, respectively

In order to avoid particles easily exceeding the search range [x] when a new particle velocity is generated [x_{imin}, x_{imax}] In iteration, the particle velocity must satisfy $v_{id}^k \in [v_{imin}, v_{imax}]$ and the following relationship exists

$$\begin{cases} v_{imin} = \chi(x_{imax} - x_{imin}) \\ v_{imax} = -v_{imin} \end{cases} \quad (6)$$

Where, χ is the speed limit coefficient and satisfies $\chi \in [0.1,1]$.

The optimal position of individual p^{best} and the optimal position of population g^{best}

$$P_{id}^{k+1} = \begin{cases} x_{id}^{k+1} & fit(x_{id}^{k+1}) < fit(P_{id}^k) \\ P_{id}^k \end{cases} \quad (7)$$

$$G_d = \min\{P_{1d}^k, P_{2d}^k, \dots, P_{Md}^{k+1}\} \quad (8)$$

2.2. Explore the Development Needs tf the Regional Economy

As the old saying goes, "the right remedy". Refers to the problem to be targeted, not blindly do some useless work. Therefore, the research on the development of IAET in regional economy should be carried out purposefully and pertinently. Using the super computing power of BD to integrate the development of the whole regional economy from ancient times to the present, we first realize the advantages and disadvantages of the regional economic development for a long time, and take advantage of the advantages and disadvantages, which is particularly important in the future economic development. Secondly, using the data receipt ability of BD, this paper synthetically analyzes the talent flow and its training status in this area, analyzes its development trend and predicts the development track, not only to carry out the present, but also to look forward to the future. Finally, facing the whole of China and even the world, using the technical advantages of BD, learning to absorb the experience of external talent training model research, at the same time can understand the economic needs of the outside world, Combined with their own situation, their own talent training model and external combination. Economic interconnection, the development of "world factories" so that the regional economy has to connect to the world, in order to seek the best development.

2.3 Establishing the Orientation of the Culture Model

In the regional economy, from individual micro enterprises to local governments, we should explore the new talent training mode. Local education institutions, such as vocational and technical schools, should also pay attention to the development of regional economy when teaching the corresponding skills courses, and educate students on the awareness of IAE. Local colleges and universities in the course of IAE to join the curriculum training, before the students enter the society should cultivate their IAE consciousness. This is what the school can do, and the local government should also actively carry out the cultivation of IAET for its own regional economy. According to the national policy and the development of local regional economy, the corresponding talent training mode is introduced. The cultivation of IAET is a new concept of education, which is a compound concept composed of "innovation", "entrepreneurship" and "education". Although "innovation" and "entrepreneurship" are different concepts, they both emphasize "innovation", and on the level of "education", training professional and applied talents is their common goal and pursuit.

3. Experiment

3.1. Experimental Subjects

To study the development of the current innovative and entrepreneurial talent training mode in the regional economy, first collect and analyze the differences between the traditional talent training mode and the innovative and entrepreneurial talent training mode. The results of BD analysis can be improved and changed on the basis of the original traditional talent training mode, saving the cost of IAE Talent Training mode. Second, through the BD analysis of the current development status of innovative and entrepreneurial talent training mode in the regional economy, combined with the development status, we find the existing problems to improve and innovate. Third, through the BD collection of regional economic development needs, and then targeted research on talent training mode. Finally, we need to investigate the development needs outside the regional economy. Talent training should not only be based on the present situation, but also face the future and face the development of the world economic form.

3.2. Experimental Design

First of all, we collect the development of talent training mode in the regional economy, integrate the economic development of IAE Talent Training Mode and the regional economic development of traditional talent training mode, and get the importance of IAE Talent Training for economic development. Only by this way can we get the significance of this experimental study. Secondly, compare the regional economic development under different IAE Talent Training mode. Collect the data of the proportion of various abilities in the cultivation of IAET and the demand of various abilities in different industries, and analyze the development of IAET in regional economy combined with BD. Finally, the comprehensive analysis of the current development of IAET in the regional economy. All the data collection and analysis technologies in the experiment are supported by BD technology.

4. Results

From the traditional perspective, most of the talents are research-oriented and academic talents. Fresh graduates can play their knowledge in each post immediately, which leads to the structural contradiction of social talent demand. The traditional one-way education mode takes the core position of teachers' knowledge teaching, and students accept knowledge statically, this way is not conducive to the cultivation of students' cognitive ability of the dynamic world, and to some extent, it will cause the disconnection between students' theoretical knowledge and practice. At present, under the background of comprehensive IAE education, various regions are reforming in the direction of cultivating applied vocational talents, and now they are in the stage of exploration and practice. Cultivating applied vocational talents in the background of IAE can cultivate students with a certain sense of innovation. At present, the innovation ability of students has received great attention, and it will only become more and more important in the future. In this regard, the school should not only strengthen the cultivation of students' personal professional ability, quality and adaptability, but also the comparison between them mainly includes the following aspects, as shown in Table 1.

Table 1. Comparison of traditional talent training and innovative entrepreneurial talent training

Contrastive content	Traditional education	Innovative Entrepreneurship Education
Training target orientation	Theoretical Knowledge Research	Combining Practice Theory with Teaching and Cultivating Innovative Consciousness
Service orientation	Service for the whole country for higher education preparation, scientific research ability, intellectual talent.	Services oriented towards regional economic development needs
Curriculum System	The Construction of System Based on Theoretical Knowledge	Open, pay attention to the training system of practical ability.
Teaching model	Classroom teaching, one-way teaching, passive acceptance	Most of the school-enterprise combination model, combined with practical project research.

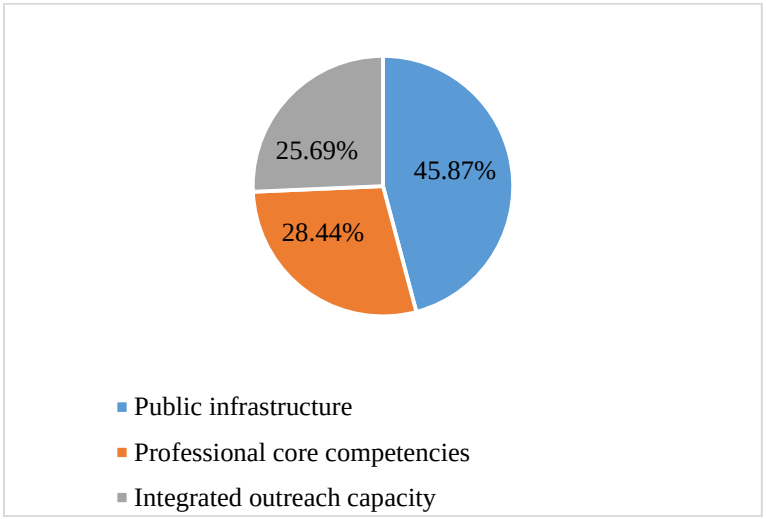

Figure 1. Proportion of training of various abilities in the training of IAET

According to the analysis of BD, the proportion of public basic ability in the cultivation of IAET

is 45.87%; the proportion of professional core ability in the cultivation of IAET is 45.87%; the proportion of comprehensive development ability in the cultivation of IAET is 45.87%; it can be seen from Figure 1 that the cultivation of public basic ability is the key in the cultivation mode of IAET, followed by the cultivation of professional core competence and comprehensive development ability can not be ignored.

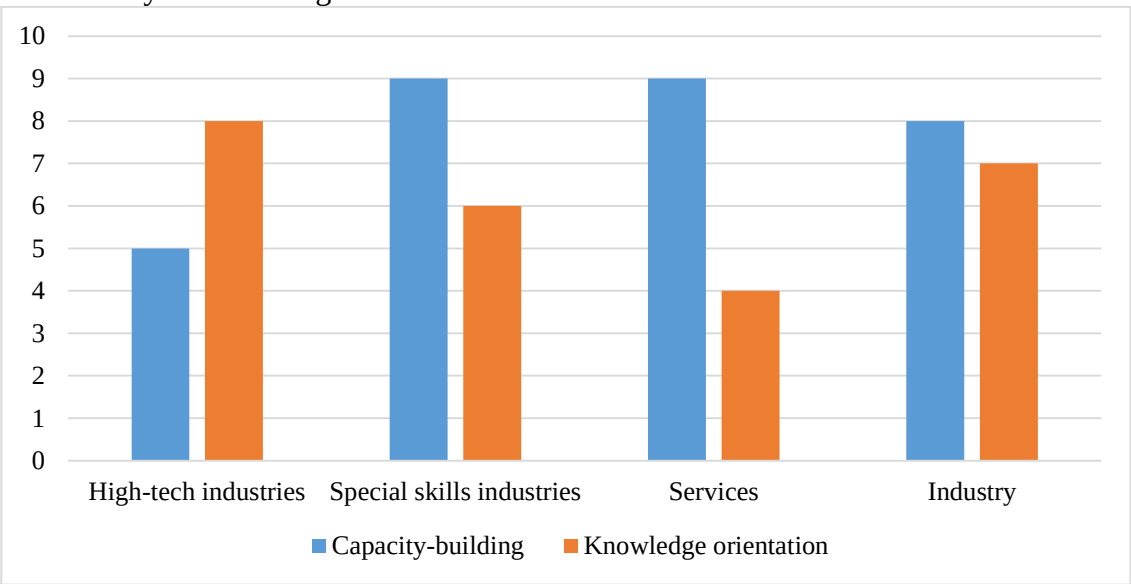

Figure 2. Knowledge/capacity based requirements for selected industries

Figure2 shows the knowledge/capability requirements of some industries in the regional economy collected through BD. It can be seen from figure 2 that except for the demand of high-tech industry for knowledge-based ability is higher than that of ability-based, most other industries are generally higher than that of knowledge-based. We can draw a conclusion: in addition to the special industry requirements for ability, the industry's demand for talent training is generally that the ability standard is greater than the knowledge standard.

5. Conclusion

The innovative talent training method based on BD technology has a stronger scientific and advanced nature, and the goal is to improve the practical ability, innovation ability and entrepreneurial ability development of reserve talents. In order to cultivate the society and the country both full knowledge reserve, professional skills and innovative entrepreneurial ability of the new era of talent.Using the advantages of BD, explore the different development needs under different regional economic systems. This paper analyze the development of innovative entrepreneurial talents in regional economy, and explores the development strategy of innovative entrepreneurial talent training model in regional economy. And draw a conclusion: innovative entrepreneurial talents have a great impact on the regional economy, and even play a direct role in promoting economic development. In the regional economy, the cultivation of innovative entrepreneurial talents is urgently needed, and the national government is also very vigorously encouraging the cultivation of innovative entrepreneurial talents in the regional economy. The development of innovative entrepreneurial talent training mode in regional economy is very rapid, and at the same time, it is necessary to combine the characteristics of regional economy to train,

targeted to train innovative entrepreneurial talents.

Funding

Humanities Projects in Colleges and Universities in Jiangxi Province (No.: JC20223).

Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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