



Simulation Analysis of Entrepreneurial Behavior Selection Mechanism of Higher Vocational College Students Based on Teaching Big Data

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Abstract. In order to make higher vocational students' entrepreneurial behavior selection mechanism more comprehensive and reduce the proportion of noise in the data, a higher vocational college students' entrepreneurial behavior selection mechanism is designed. Obtain the talent training objectives of higher vocational colleges, strengthen the training of entrepreneurial skills, identify the characteristics of entrepreneurial decision-making, extract the constituent elements of students' entrepreneurial behavior by using teaching big data, obtain other required entrepreneurial resources through specific channels, and build a selection mechanism. Experimental results: the average proportion of noise data in the entrepreneurial behavior selection mechanism of Higher Vocational College Students in this paper is 5.397%. After integrating the teaching big data, the entrepreneurial behavior selection mechanism of higher vocational college students is more comprehensive and reduces the proportion of noise.

Keywords: Teaching big data · Higher vocational colleges · Entrepreneurial behavior · Selection mechanism · Student subject · Personnel training

1 Introduction

Entrepreneurial behavior is a multi-dimensional concept of ability centered on people's individual psychological characteristics. To analyze the connotation of entrepreneurial behavior of higher vocational students, we must first understand the characteristics of higher vocational education and the common characteristics of higher vocational student groups. Compared with ordinary undergraduates and postgraduates, higher vocational students have a shorter educational system, generally lower knowledge level and less systematic knowledge structure. Therefore, the goal and content selection of entrepreneurial behavior research should be in line with the actual situation of higher vocational students, assist students to choose the industrial field of entrepreneurship in the future, and aim to cultivate innovative and high skilled application-oriented professionals suitable

for production, construction and other front-line needs, so as to make entrepreneurial behavior research more targeted and achieve better results [1, 2].

From the perspective of education types: Higher Vocational Education and general higher education are two types of education. General higher education is “knowledge and culture” education, focusing on the needs of students’ personality development. Higher vocational education is “technical culture” education, focusing on the needs of social development. Therefore, higher vocational colleges should recognize the current situation of social development, grasp the new development opportunities brought by entrepreneurial behavior research, and highlight their own advantages and characteristics in order to develop better. The severe employment situation is the most direct reason for most higher vocational colleges to carry out entrepreneurial behavior research.

From the perspective of talent orientation, ordinary higher education cultivates “theoretical research-oriented senior talents” and higher vocational education cultivates “technology application-oriented senior talents”. Therefore, higher vocational colleges regard the research on entrepreneurial behavior as the content of employment guidance, and believe that the research on entrepreneurial behavior serves the employment of graduates and is an effective auxiliary means to solve the employment of graduates. This one-sided understanding and inaccurate positioning make the systematic education system of entrepreneurial behavior research in Higher Vocational Colleges stay at the level of slogan and follow the trend.

From the perspective of educated students: it is generally believed that the learning ability and academic level of higher vocational students are lower than those of ordinary college students. The implementation and development of entrepreneurial behavior research are hindered by factors such as low attention to entrepreneurial behavior research in higher vocational colleges, weak curriculum pertinence, single curriculum, weak curriculum teachers, insufficient investment in employment and entrepreneurship scientific research, and lack of entrepreneurial enthusiasm of students. The research holds that the definition of knowledge, especially the connotation of applied knowledge, has made a new breakthrough in social cognition, that is, there are two attributes of applied knowledge in society: one is declarative knowledge involving facts, concepts, understanding and principles, which should answer the questions of “what” (facts and concepts) and “why” (understanding and principles). Therefore, actively constructing systematic differentiated entrepreneurial behavior research curriculum modules and cultivating higher vocational college students at different levels and stages should become an important breakthrough in the implementation of entrepreneurial behavior research in Higher Vocational Colleges [3]. Second, the process knowledge involving experience and strategy should answer the questions of “how to do” (experience) and “how to do better” (strategy). Educational practice and scientific research have proved that people with strong image thinking can quickly acquire empirical and strategic knowledge, but they are relatively excluded from declarative theoretical knowledge.

Relevant Working

Scholars Liu Zhibing and others analyzed the relationship between the guarantee mechanism and effectiveness of entrepreneurship education from the perspective of students, analyzed its impact on the explicit and implicit effectiveness of entrepreneurship education from the four levels of support mechanism, supervision mechanism, incentive

mechanism and information mechanism, and constructed the corresponding information platform, However, it ignores the problem that the constituent elements of entrepreneurial behavior are not comprehensive [4].

Under the background of mass entrepreneurship and innovation education, scholar Hu Xia took Yunnan culture and art entrepreneurship College as an example to carry out a questionnaire survey on students' entrepreneurial awareness and entrepreneurial intention. The survey results show that students in higher vocational art colleges have a certain entrepreneurial consciousness, promote corresponding entrepreneurial behavior according to their entrepreneurial consciousness, and put forward thoughts and suggestions on the construction of basic courses of innovation and entrepreneurship in higher vocational art colleges, but do not consider the problem that the constituent elements of entrepreneurial behavior are not comprehensive [5].

Based on the shortcomings of the above research results, to further improve the entrepreneurial behavior selection mechanism of higher vocational college students, this paper puts forward the simulation analysis of entrepreneurial behavior selection mechanism of Higher Vocational College Students Based on teaching big data. According to the talent training objectives of higher vocational colleges, strengthen the training of entrepreneurial skills and identify the characteristics of entrepreneurial decision-making; Using teaching big data to calculate the conditional probability expectation of joint distribution and extract the constituent elements of students' entrepreneurial behavior; Obtain other required entrepreneurial resources through specific channels, determine the characteristics of enterprise decision-making, and build a selection mechanism.

2 Selection Mechanism of Students' Entrepreneurial Behavior in Higher Vocational Colleges Based on Teaching Big Data

2.1 Obtain the Talent Training Objectives of Higher Vocational Colleges

Higher vocational college is the abbreviation of higher entrepreneurship college and an important part of colleges and universities. The starting point and end point of all education is the orientation of talent training objectives. The training orientation of higher vocational colleges should correspond to the types of social talents and talent structure. In fact, higher vocational colleges should focus on the cultivation of high-quality talents, not on the improvement of practical skills. From a worldwide perspective, higher entrepreneurship education is a new type of higher education emerging at a certain stage of economic and social development. It is another type of higher education with different nature from traditional ordinary higher education, which aims to cultivate certain theoretical knowledge and strong practical ability. It has the following characteristics: enable students to master the main technology and have the necessary theoretical knowledge and scientific and cultural foundation, that is, focus on practical application. Focus on the comprehensive application of relevant knowledge. Cultivate students' ability of expression, communication and cooperation. Pay attention to the learning of practical knowledge and strengthen the training of entrepreneurial skills. Practicality and innovation and entrepreneurship are inextricably linked.

In this context, the basic qualities of students in higher vocational colleges are shown in Fig. 1:

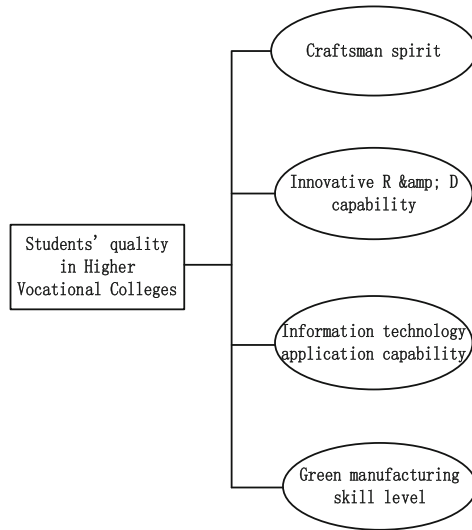


Fig. 1. Schematic diagram of the basic literacy of students in higher vocational colleges

As can be seen from Fig. 1, higher vocational colleges should highlight the characteristics of innovation and entrepreneurship oriented in talent training orientation. This is also consistent with the strategic characteristics of “mass entrepreneurship, mass innovation” and “supply side structural reform” proposed by the state at this stage, and is also consistent with the goal of cultivating applied talents in higher vocational colleges. In addition, higher vocational colleges include two academic education levels: undergraduate and junior college. Higher entrepreneurship education focuses on specificity. It focuses on cultivating professional technical application-oriented talents and takes cultivating technical talents who adapt to the front-line technology of the society as the main goal, which is different from that of ordinary higher education. That is, the goal of higher vocational education is practical talents, and the goal of general higher education is scientific research talents.

The latest professional teaching standards of higher entrepreneurship schools set the talent training objectives of higher vocational colleges as follows: “Cultivate practical talents with firm ideals and beliefs, all-round development of morality, intelligence, physique, beauty and labor, certain scientific and cultural literacy, good humanistic quality, entrepreneurial ethics and innovation consciousness, craftsman spirit of excellence, strong employability and sustainable development ability. They are oriented to grass-roots, production, service and management of first-line entrepreneurial positions Higher education aimed at, technical and skilled professionals is the higher stage of entrepreneurship technology education. High quality technical talents who master their professional knowledge and technical skills. “At the same time, different professional objectives are defined for different majors. For example, the professional objectives of nursing specialty are: Nursing Posts facing the health industry and high-quality technical and skilled talents who can engage in nursing and health care. On the basis of completing secondary education, higher vocational education tries to cultivate a group

of talents with university knowledge and certain professional technology and skills. The teaching of their knowledge is not perfect, but practical and practical.

2.2 Identify Entrepreneurial Decision-Making Characteristics

The structure of entrepreneurial model is complex by using four variables: entrepreneurs, newly established organizations, the environment faced by new enterprises and the process of establishing new enterprises. Entrepreneurs should have the desire to achieve, the spirit of daring to take risks and rich experience. Entrepreneurs, discovering business opportunities, establishing organizations, integrating resources, producing products or providing services and returning to the society constitute the process of entrepreneurship, and highlight the characteristics of decision-making in this process. This principle provides the insight that once a person is engaged in an industry entrepreneurship, he will be more likely to see new opportunities in the industry than those who observe from outside the industry. Cognitive factors, opportunity recognition may be a congenital skill or a cognitive process. Although only dedication can not guarantee the success of a career, people without dedication can never achieve much. Every successful person has a strong ambition and strongly hopes to become an excellent and outstanding person. Some people think that they can see the opportunities that others miss. Most entrepreneurs view themselves in this way and think they are more alert than others. Vigilance is largely an acquired skill.

The main structure of entrepreneurial decision-making features is shown in Fig. 2:

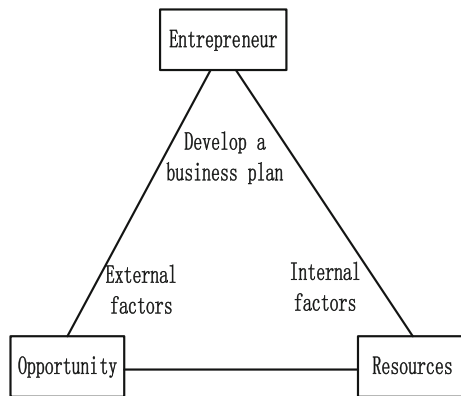


Fig. 2. Main structure of entrepreneurial decision-making characteristics

As can be seen from Fig. 2, the acquisition and identification of entrepreneurial opportunities is the key to entrepreneurial activities. Many scholars have studied the sources of entrepreneurial opportunities. The following are four main factors for consensus: Previous experience. Previous experience in a particular industry helps entrepreneurs identify business opportunities, which is known as the “corridor principle”. It means that once an entrepreneur starts a business, he begins a journey in which the “corridor” leading to

entrepreneurial opportunities will become clearly visible. Dedication refers to the emotion and unswerving belief that people pursue their own career. People who have more knowledge in a field tend to be more alert to opportunities in that field than others. No matter what you do or what you do, you will have enterprising spirit and self-confidence, stimulate initiative and creativity, work passion, entrepreneurial passion and dedication. People with strong dedication can take the initiative to learn and improve themselves, constantly cultivate their own quality, improve their comprehensive ability and have a correct attitude. Have the ability and courage to move forward bravely, never be arrogant in victory and never be discouraged in defeat. Social relationship network, social relationship network can bring valuable information carrying entrepreneurial opportunities. The depth and breadth of personal social relationship network affect opportunity identification. Research has found that social networks are the main source of individual identification of entrepreneurial opportunities. Compared with strong relationships, weak relationships are more conducive to individual identification of entrepreneurial opportunities. Creativity, creativity is the process of producing novel or useful ideas. To some extent, opportunity recognition is a creative process and a repeated creative thinking process.

2.3 Teaching Big Data Extracts the Constituent Elements of Students' Entrepreneurial Behavior

Elaborate the composition of students' entrepreneurial behavior in combination with the teaching objectives of Higher Vocational Colleges [6]. Entrepreneurial behavior is the ability to create and expand business, and the integration of dedication and pioneering ability. Among the constituent elements of entrepreneurial behavior, dedication should become the most important factor. Students are required to strive to develop and improve themselves, enhance their moral level and dedication in the process of growth, study and life. Write an entrepreneurship plan, which describes the objectives achieved by the new enterprise plan, including business activity description, marketing plan, industry description, operation plan, financial plan, organization plan, production plan, and how the new enterprise implements these objectives, so as to help entrepreneurs clarify their ideas and accurately locate. In practical work, dedication takes discipline, reliability, self-confidence, quality awareness, safety awareness and decision-making ability as the carrier and can be realized. Responsibility is passive, not optional, not conditional. Of course, the restraint of responsibility depends not only on legal enforcement, but also on moral restraint and self-cultivation. With the help of teaching big data of higher vocational colleges, obtain entrepreneurial resources, including financing, human resources, basic hardware resources, social relations resources, as well as the gap of resources and the current supply of available resources.

Obtain other necessary entrepreneurial resources through specific channels and carry out market business activities smoothly. Similar to the interactive numerical optimization augmented reality teaching mode, the conditional probability expectation of joint distribution is calculated after collecting the characteristic data of entrepreneurial behavior [7]. The expression formula is:

$$R(e, e^i) = \sum \sum \frac{1}{\varepsilon \log((e, e^i) | \beta)} \quad (1)$$

In the formula (1), e represents unobserved data, i represents the optimal value of the parameter, β represents the total number of missing data.

The management and implementation of start-ups, including management methods, team building, determination of organizational structure, identification of current and potential problems, major adjustment of entrepreneurship strategy and completion of operation control system. Only those who shoulder their own responsibilities, strive to do their part, and do not bargain with responsibility can cultivate a sense of responsibility and dedication, create social value and realize their own value. The importance of sense of responsibility is beyond doubt. "Sense of responsibility is the spirit that a person actively plays a positive and beneficial role in himself, nature and human society, including the state, society, collective, family and others". The environment of entrepreneurship mainly includes market factors, technical factors, policy factors and resource factors. The content of the organization includes the internal organizational structure and the choice of organizational strategy. By exploring the dimension of each variable and its interaction with other variables, we can fully reveal the repeatability of the process of new enterprise establishment.

Considering the influence of transaction behavior on entrepreneurial behavior, the components of students in higher vocational colleges are found, as shown in Fig. 3:

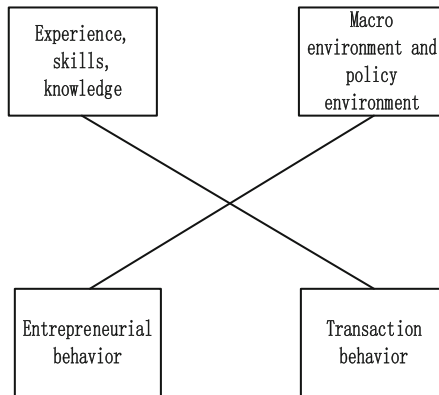


Fig. 3. Components of the entrepreneurial behavior of higher vocational students

As can be seen from Fig. 3, the creation of any new enterprise is the result of the interaction between these four dimensions. In this sense, the sense of responsibility is an active mental state of taking responsibility, and the responsibility is a passive behavior. From the perspective of teaching big data, entrepreneurial activities themselves have been affected by various environments, which are restricted by many subjective and objective factors, so the risk factors throughout the whole entrepreneurial activities require entrepreneurs to have enough tolerance. Bearing ability, as an important content of the cultivation of higher vocational students' entrepreneurial behavior, should run through the school education activities, and create necessary situations to improve the ability to resist setbacks, so as to exercise students' better ability to bear.

2.4 Build the Selection Mechanism

In the process of entrepreneurial activities, they can stimulate people's potential, maximize their talents, and through exercise can improve their ability in entrepreneurial activities, make it easier for people to obtain new achievements in the workplace, and promote personal progress. Professional entrepreneurial behavior, is the necessary entrepreneurial behavior, is the basic entrepreneurial behavior. Entrepreneurial interests are conducive to people to adapt to the entrepreneurial environment and entrepreneurial role. Entrepreneurial interest can lead people to an optimistic attitude in entrepreneurial activities, which is conducive to people to adapt to their entrepreneurial environment and entrepreneurial roles.

According to the calculation results of formula (1), the data to be classified is divided into several groups to obtain the membership degree of the elements, and the specific expression formula is:

$$L = \frac{(m^2/\varphi_n)}{\sum_{n=1} m - 1} \quad (2)$$

In the formula (2), m represents the cost function minimum, φ represents member degree of the cluster center, n represents the set threshold. Similarity measure is a measure of the similarity between two objects in a clustering result. There are two ways to measure it: the degree of dissimilarity expressed by the distance between objects and the similarity expressed by the correlation between objects. It is a commonly used denoising method based on Euclidean distance. This method determines whether a data belongs to noise data by setting a Euclidean distance threshold. Data distances can be calculated by the following equation:

$$d = \frac{(1 - \mu)^{-1}}{(\mu^2 + \eta)} \quad (3)$$

In the formula (3), μ represents total number of sample points within the cluster, η represents number of noise data.

Adapt to entrepreneurship through an optimistic attitude, so as to better complete their own work and obtain better development. Higher vocational colleges have mature experience in cultivating students' professional entrepreneurial behavior, strong teachers, practical training equipment and facilities and a more systematic education system. The professional entrepreneurial behavior of higher vocational graduates is relatively strong. Entrepreneurial interest will enable people to better understand their entrepreneurial role, adapt to their own work faster, and achieve success faster. People have different ability types, that is, the development direction of people's ability is different. Professional surveys show that entrepreneurship is divided into different types because of the different nature, content and environment of work people face. This is inseparable from the characteristics of higher vocational education, because all along, higher vocational education is dominated by entrepreneurial skills and aims to cultivate entrepreneurial talents needed by enterprises. Including specialty setting and curriculum setting, they are studied according to the needs of society and enterprises. Because of the different

types of entrepreneurship, the requirements of all entrepreneurship on personal ability are also different.

The ability level is consistent with the entrepreneurial level. In entrepreneurial activities, people have different responsibilities. Entrepreneurship is divided into different levels. Entrepreneurship at different levels requires people to have different abilities. Innovation and entrepreneurship behavior refers to the potential psychological quality that people show in the process of successfully completing the activities of creating new things based on original knowledge and experience. Innovative entrepreneurial behavior is the most important, valuable and highest level entrepreneurial behavior among all entrepreneurial behaviors. Therefore, people should match the level according to their ability level. Play the role of superior ability. Everyone has various abilities of different nature. The dominant ability plays a leading role in entrepreneurial activities, and the other abilities are not prominent. For entrepreneurial choice, we should give full play to our professional, good and advantageous abilities to better complete the workplace work through these advantageous abilities. Practice is the application process of integrating theory with practice and applying theory to practice. It is also a process of knowledge internalization. Paying attention to the cultivation of students' practical entrepreneurial behavior is a process of learning knowledge, digesting and absorbing, constantly reflecting, putting ideas into action, and internalizing them into entrepreneurial behavior.

3 Simulation Analysis

3.1 Build a Simulation and Experimental Environment

SPSS statistical software was used to conduct kmo and Bartlett spherical test on the samples (i.e. the first batch of data: 282 samples) to confirm whether they are suitable for exploratory factor analysis. The results of exploratory factor analysis show that the kmo value is $0.878 > 0.7$, and the X^2 of Bartlett spherical test is 6864.343, which is significant at the level of 0.01, indicating that the exploratory factor analysis of sample 1 is appropriate.

The operating system of the host is Ubuntu, and the system memory is 8GB. The experimental environment simulates the real network environment. The host installs the packet capture tool tcpdump, and two of the attack tools nmap, Nessus and Loic are installed on each host.

The principal component analysis was carried out on 50 items of the initial scale of College Students' entrepreneurial success standard. The factors were extracted according to the principle that the eigenvalue was greater than 1, and the final factor load matrix was obtained by orthogonal rotation with maximum variance. After multiple factor analysis, 18 items were deleted, and a better distinguishing factor structure was obtained.

3.2 Results Analysis

Select the higher vocational college students' entrepreneurial behavior selection mechanism based on clustering algorithm as the control group 1, and the higher vocational

college students' entrepreneurial behavior selection mechanism based on support vector machine as the control group 2, to compare with this method. Ensure a consistent environment between the control and experimental groups. Test the noise data proportion of the three mechanisms under different data scale conditions. The smaller the value, the better the performance of the mechanism.

The experimental results are shown in Tables 1, 2 and 3:

Table 1. Data scale 200 noise data ratio (%)

The number of experiments	The control group 1	The control group 2	Design method of this paper
1	6.332	5.994	3.227
2	5.453	6.302	2.862
3	6.458	5.778	2.756
4	6.553	6.314	3.116
5	6.881	6.445	2.768
6	7.003	5.886	3.087
7	6.544	6.418	2.767
8	7.102	6.390	3.181
9	6.732	6.112	2.556
10	6.128	5.767	3.192

Table 2. Data scale 500 noise data ratio (%)

The number of experiments	The control group 1	The control group 2	Design method of this paper
1	8.178	8.876	6.322
2	9.055	9.334	5.979
3	8.207	9.646	6.334
4	9.223	8.898	5.878
5	8.239	9.238	6.356
6	8.556	8.336	5.912
7	8.778	8.868	6.203
8	9.329	9.134	5.878
9	9.123	8.334	6.718
10	8.997	8.438	5.809

It can be seen from Table 1 that the average proportion of noise data of the entrepreneurial behavior selection mechanism of Higher Vocational College Students

Table 3. Data scale 1000 noise data ratio (%)

The number of experiments	The control group 1	The control group 2	Design method of this paper
1	12.636	12.757	7.373
2	13.009	13.650	6.989
3	12.465	12.656	6.220
4	13.676	13.125	6.313
5	13.912	12.663	7.276
6	12.544	13.886	6.878
7	13.443	12.765	7.673
8	14.090	13.656	7.554
9	13.615	12.609	7.286
10	12.656	13.618	7.433

in this paper and the other two entrepreneurial behavior selection mechanisms of higher vocational college students are 2.951%, 6.519% and 6.141% respectively.

It can be seen from Table 2 that the average proportion of noise data of the entrepreneurial behavior selection mechanism of Higher Vocational College Students in this paper and the other two entrepreneurial behavior selection mechanisms of higher vocational college students are 6.139%, 8.769% and 8.910% respectively.

It can be seen from Table 3 that the average proportion of noise data of the entrepreneurial behavior selection mechanism of Higher Vocational College Students in this paper and the other two entrepreneurial behavior selection mechanisms of higher vocational college students are 7.099%, 13.205% and 13.139% respectively.

According to the above data, the noise data ratio of this method is low.

4 Conclusion

In order to improve the existing selection mechanism of students' entrepreneurial behavior in higher vocational colleges, this paper designs a selection mechanism of students' entrepreneurial behavior in higher vocational colleges. By setting the talent training objectives of higher vocational colleges, we can distinguish the characteristics of entrepreneurial decision-making; Innovatively using teaching big data to calculate the conditional probability expectation of the joint distribution, and extract the constituent elements of students' entrepreneurial behavior and construct the selection mechanism of students' entrepreneurial behavior in higher vocational colleges. The experimental results show that the entrepreneurial behavior selection mechanism of higher vocational college students designed in this paper reduces the proportion of noise data, and the entrepreneurial behavior selection mechanism of higher vocational college students is more perfect.

At the same time, according to the research results of this paper, it can be found that the standards of entrepreneurial success are diverse, which means not only economic income and return, but also the improvement of self-growth and development space. Today, when quality education is advocated, the entrepreneurial behavior of higher vocational students has great research value. In the future, we need to constantly improve the diversity of research objects.

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