ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

A Study on the Reform Effect of Business Data Analysis Course under the Background of "Digital Commerce Promoting Agriculture"

Liyue Mao[1, *]

[1]*Business School, Chongqing College of Electronic Engineering, Chongqing, China*
[*]*Corresponding author*

Abstract: *Against the backdrop of the deepening of digital economy in rural construction, revitalizing rural economy through digital commerce has become a useful approach. Vocational college talents, as an important component of rural talent supply, play a promoting role in rural development. So, it is necessary to evaluate whether the construction of business data courses in vocational colleges meets the needs of rural development and how effective it is in empowering the "digital commerce promotes agriculture" policy. Therefore, this article combines the theory of authenticity evaluation with the willingness and ability of vocational college business talents to return to their hometowns for employment and entrepreneurship, and constructs an evaluation system for business data analysis courses under the background of promoting agriculture through digital commerce, in order to improve the empowerment effect of course construction on promoting agriculture through digital commerce.*

Keywords: *Vocational colleges; Business data analysis; Curriculum reform; Effect evaluation; Shushang Xingnong*

1. Introduction

In recent years, the digital economy has begun to accelerate the penetration of agriculture and rural areas, and the digital economy has become a new production factor of agriculture-related enterprises. In May 2022, the "Rural Construction Action Implementation Plan" jointly issued by the General Office of the Communist Party of China Central Committee and The General Office of the State Council clearly pointed out that it is necessary to "carry out the digital rural construction and development project, in-depth implementation of the" Internet + "agricultural products out of the village into the city project and the" number of businesses to promote agriculture "action," encourage and guide college and secondary school graduates to participate in the construction of digital villages." In this case, higher vocational colleges should speed up the training of a large number of digital agricultural production and operation talents and rural entrepreneurship and innovation leaders who have excellent professional and technical skills, have the quality of "double innovation", and "understand agriculture, love rural areas and love farmers", so as to provide talent support for the construction of digital countryside. At present, higher vocational business talents have problems of excessive supply and demand such as large employment competition and small development space, but there are also insufficient supply and demand problems such as not closely connected with rural industry and prominent tendency of graduates to leave agriculture in the rural construction that needs talents. Therefore, training digital business talents for rural areas is an effective way to achieve high-quality development of vocational business talents, solve the balance between supply and demand, and assist the overall revitalization of rural areas.

Business Data Analysis is a core course for e-commerce, marketing, logistics management and other business majors. It mines important information in business data to assist enterprise operation, development and innovation, and is a "new engine" and "new momentum" for production and operation. With the rapid development of digital economy, this course plays an important role in the training of business talents. The purpose of higher vocational curriculum reform is to improve the quality and efficiency of personnel training, and the effect evaluation of personnel training is an effective way to test the validity of curriculum reform. Therefore, based on the theory of authenticity evaluation, this study examines the change process of students' implicit and explicit abilities, and tests the reliability of business data analysis curriculum reform to empower the construction of digital countryside, with a view to effectively training more data-oriented business talents for the construction of digital countryside and promoting the high-quality development of rural production and operation and agricultural economy.

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

2. Research Status

2.1. Research on Vocational Education under the Construction of Digital Countryside

Digital rural construction empowers the liberation of rural digital productive forces with data elements, and promotes the transformation of rural production relations in the form of platform-based economic organization (Xie Wenshuai et al., 2022) [1]. It has become an effective way to promote rural revitalization and realize agricultural and rural modernization with high quality. However, the weak foundation of rural digitalization, the low level of digital application, the lack of professional talents, and the lack of attention from grass-roots governments hinder the improvement of the capacity of rural digitalization construction (Wu Xiaolong, 2023; Yang Xinfu, 2021) [2], it is necessary to promote the integration of higher education, vocational education and farmer literacy cultivation, and targeted training and allocation of new digital talents needed for integrated development, including new rural talents with digital literacy (Chen Ni and Li Zhi, 2023) [3]. Vocational education is closely related to rural development (Wang Zhiyuan and Zhu Dequan, 2023; Adedokun et al, 2020) [4] and Qu Xiaoli (2021) proposed to realize rural revitalization enabled by vocational education from the aspects of building a collaborative framework, opening up integration paths and integrating into digital countryside. In view of the problems such as the tendency of higher vocational talents to leave agriculture, the traditional training methods, and the lack of integration of production and education (Lao Siming, 2022), it is not only necessary to innovate the concept of cultivating new professional farmers, but also to change the difficulty in recruiting agriculture-related majors and the tendency to leave agriculture in employment (Guo Xiaojian and Qi Fang, 2021). It is also possible to cultivate the service industry of vocational colleges to promote agriculture and cultivate rural professionals through the integrated development model of "school, village and enterprise" (Li Fengxia et al., 2023; Huang Liying et al., 2022).

2.2. Research on Curriculum Ideological and Political Construction in Higher Vocational Colleges

The implementation of the strategy of rural revitalization makes the society increasingly demanding the comprehensive quality of higher talents, which not only requires excellent professional ability, but also puts forward higher standards for ideological and political quality and moral quality, emphasizing that professional education and ideological and political education are indispensable (Chen Haiyan, 2021). Most agriculture-related majors and courses deeply integrate the rural revitalization strategy into the ideological and political construction of professional courses, but it is rarely involved in other non-agricultural majors (Li et al., 2022). For example, Zhang Xu and Wang Zhixiu (2022) took cultivating new agricultural talents with the characteristics of "one understanding and two love", the feelings of "three rural areas in a big country", and the accomplishment of "knowing and loving agriculture" as the ideological and political goals of the curriculum [5]. Based on the actual situation of students, Shu Yinghua et al. (2022) constructed the ideological and political goals of this course from five dimensions of "student values, professional accomplishment, industry development, national demand and global vision" based on the education goals of agriculture-related colleges and universities and the training goals of agronomy majors [6]. The course of Business Data Analysis is to extract useful data from disorganized business data to study the inherent laws and characteristics of the data. However, it is a very complicated thing to carry out ideological and political teaching in applied skills courses. The teaching mode of "theory + practice" can be adopted to integrate ideological and political teaching contents into theoretical teaching and practical teaching design respectively (He Junying, 2021; Song, 2021) [7]. Let students feel the confidence of the big country and the feelings of family and country in the data, understand the importance of honesty and law-abiding from the cases, experience the scientific spirit and professional attitude required by data work from the practical training, effectively promote them to form a correct world outlook, outlook on life and values, and cultivate their good professional quality (Qi Xin et al., 2022) [8]. Yu Feifei (2020) put forward the concept of "business road is humanity" business culture education, and explored the design and practice of curriculum ideology and politics from the aspects of teaching objectives, models, methods and assessment.

2.3. Research on Evaluation of Implementation Effect of Teaching Reform in Higher Vocational Education

Zhang Xugang (2020) combined with the core elements of the quality development of the integration of production and education, built a CIPP quality evaluation index system for the integration of production and education in rural vocational education with "four stages and five degrees in one" [9]. Taking the Sunshine SRC-T model as an example, Jiang Yixian and Wang Bingan (2020) designed an

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

application-oriented undergraduate talent training and evaluation system based on serving rural revitalization from the perspectives of "mental cultivation, quality improvement, ability tempering, and cultural confidence building" [10]. Zhu Dequan and Yang Lei (2021) estimated the contribution of vocational education services to rural revitalization based on Cobb-Douglas production function [11]. Liu Yingxia and Wang Ruochao (2021) take the effect as the orientation and based on the impact factors of vocational skill level certificates on the training of technical skill talents, build the evaluation index system of education effect of 1+X certificate system [12]. Guo Fang (2022) took e-commerce major as the research object and built an evaluation system for the effect of ideological and political education in vocational education courses based on the theory of authenticity evaluation [13].

2.4. Research Review

To sum up, scholars at home and abroad have carried out rich discussions on vocational education, curriculum reform, business data analysis curriculum construction, etc., which has the significance of learning and reference for this study. However, there are still the following shortcomings: the research mainly focuses on the discussion on the cultivation mode of agriculture-related colleges or talents under the background of rural revitalization, and it is not enough to think about the tendency of "leaving agriculture" shown by digital business professionals who are in urgent need of talent support in the digital rural strategy, and the discussion on the effect of business data analysis curriculum reform in higher vocational colleges on empowering digital rural construction is still lacking. The above shortcomings leave room for this study.

3. Evaluation Basis of Business Data Analysis Course Reform Effect Under the Background of Business and Agriculture Development

3.1. Theoretical Basis

The reality evaluation theory was proposed by Archbald and Newman (Archbald & Newman, 1988) to help students get in touch with meaningful realistic tasks. The reality assessment theory helps students train their thinking habits through real situation tasks, and assesses students' real level in psychology and skills according to their performance in completing tasks. It examines students' development in multiple dimensions such as knowledge, skills and thinking through real and complete works or work task results (Villarroel et al., 2017). The closer the assessment task is to real-world scenarios, the less likely students are to misbehave, and the stronger their professional identity, communication skills and employability are correspondingly improved (Sotiriadou et al., 2019). Authenticity assessment can help improve students' attitude towards their studies to some extent. Students are willing to participate in teaching and accumulate experience through hard work. At the same time, vocational skills such as communication and collaboration skills, critical thinking and self-awareness are improved (Sokhanvar et al., 2021). There is a natural coupling between the concept of authenticity evaluation and the job-oriented vocational education training of skilled talents (Li Haizong and Xiao Wenfang, 2021) [14]. Vocational education advocates the concept of action teaching in the context of real posts and emphasizes teaching and learning at work, which coincides with the concept of authenticity evaluation (Guo Fang, 2022). Therefore, this paper designs the evaluation model of business data analysis curriculum reform based on the theory of authenticity evaluation. Starting from the actual needs of digital rural construction for digital new farmers, this paper investigates the willingness and ability of vocational business talents to participate in digital rural construction, and summarizes the willingness of students to actively invest their professional knowledge into digital rural construction.

3.2. Survey and design of business students' willingness to participate in rural construction

For business students, this paper conducts a survey on their views on rural areas, returning home employment and entrepreneurship policies, and their willingness to participate in agricultural production and management. The questionnaire included the following questions:

(1) What is your gender? A. Male; B. female

(2) What is your major? A. Electronic commerce; B. Marketing; C. Logistics; D. Other

(3) What grade are you in? A. Freshman year; B. Sophomore year; C. Junior year

(4) What is your account type? A. Rural household registration; B. Urban registration

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

(5) Do you have family or relatives who have lived in a small town or country for a long time? A. Yes; B. No

(6) Do you like the rural life? A. Like it very much; B. In general; C. don't like

(7) Are you optimistic about the future development plan of your hometown? A. Look down on; B. In general; C. Very optimistic

(8) Have you ever considered contributing to the development of your hometown? A. No; B. Yes

(9) Are you clear about the policies related to returning home for employment and entrepreneurship? A. not clear; B. Be clear; C. More clearly; D. Very clear

(10) Are there any cases of college students returning home for employment or entrepreneurship around you? A. No; B. Yes

(11) Has any college student returned to your hometown to find employment or start a business successfully? A. No; B. Yes

(12) Do you think participating in rural development is a wise choice? A. No; B. Yes

(13) Do you have the resources to return home for employment and entrepreneurship? A. No; B. Yes

(14) Do the government's support for rural development make you willing to return to your hometown to work or start a business? A. not considered; B. Have no intention of returning home; C. Have an idea, but no preparation; D. Yes, I have made active preparations

(15) Which of the following factors will be your motivation to return home to work or start a business? (multiple choices) A. Want to contribute to the development of the countryside; B. Through this way to achieve their career ideals; C. The current employment situation is not good, and I have to do it; (D) Relying on policy facilitation to achieve better development; E. Other

(16) Which of the following factors are the difficulties for you to return to your hometown for employment and entrepreneurship? (Multiple options) A. No corresponding resources are available; B. Lack of ability to return home to start a business or find employment; C. not optimistic about the development of the countryside; D. Lack of support from friends and family; E. intend to pursue further education; F. Other

(17) Would you recommend others to participate in rural development? A. No; B. Yes

3.3. Analysis of Business Students' willingness to Participate in Rural Construction

The questionnaire was issued by the School of Finance and Economics Management of Chongqing Electronic Engineering Vocational College. A questionnaire survey was conducted on the attitude preference of business students on returning to their hometown for employment and entrepreneurship, and the willingness of vocational students to return to agriculture under the perspective of rural revitalization was identified. A total of 262 questionnaires were collected. According to the survey results of the basic situation of the surveyed students, 76.34% of the students have rural household registration and nearly 4/5 of the students have family members living in the countryside or small towns for a long time, which provides a basis for vocational college students to return to their hometown for employment and entrepreneurship and participate in rural construction. In the direction of rural life preference, only 3.76% of the students expressed strong antipathy, 59.14% of the students were in a neutral mood. As for the prospects of rural development, 4.84% of the students are not optimistic about rural development, and 39.78% are wait-and-see. As for the degree of understanding of returning home employment and entrepreneurship policies, 33.33% of the students said they did not understand, and 54.3% said they understood a small part. However, 83.87% of the students said that participating in rural construction is a wise choice. As for the survey on returning home for employment and entrepreneurship, 33.33% of the students lack thinking, 48.92% of the students have ideas but are not prepared, and only 14.52% of the students have no intention of returning home. It is worth noting that 3.23% of the students are still making active preparations. Among the difficulties in returning to their hometown for employment and entrepreneurship, 83.33% of the students said that they lacked the ability to return to their hometown for entrepreneurship and employment, and 16.67% of the students were not optimistic about the development of rural areas. In general, from the group surveyed, the origin characteristics of vocational college students make it possible for them to return home to participate in rural construction. Whether this improves the enthusiasm of students to return home to start businesses and employment needs to be tested.

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

4. Study on the Effect of Course Reform of Business Data Analysis under the Background of Business Development and Agriculture

4.1. Analysis on the Difference of Business Students' willingness to Return Home to Start Businesses and Employment

Most of the students in higher vocational colleges have rural household registration, which provides the basic conditions for them to return home to start businesses and employment. However, whether rural household registration brings more possibilities for college students to return home to find jobs and start businesses needs to be tested by hypothesis. Therefore, set up the following hypothesis test:

Original hypothesis H0: return intention of rural household registration respondents = return intention of urban household registration respondents

Alternative hypothesis H1: the return intention of rural household registration respondents ≠ the return intention of urban household registration respondents

At the end of the two sample mean left t test, the degree of freedom $df = \frac{(s_1^2/n_1+s_2^2/n_2)^2}{\frac{(s_1^2/n_1)^2}{n_1-1}+\frac{(s_2^2/n_2)^2}{n_2-1}} = 90.88$, Statistic $t = \frac{\overline{x_1}-\overline{x_2}}{\sqrt{s_1^2/n_1+s_2^2/n_2}} = 1.28$, left the critical value is 1.66, the right critical value of 1.66. Since the statistic's left critical value <t< right critical value falls into the acceptance domain, the null hypothesis is accepted. That is, the willingness of rural household registration and urban household registration to return home is the same, that is to say, the willingness of these students to return home has not been mobilized.

In addition, whether vocational college students have continuously deepened their understanding of rural revitalization in the course learning, that is, whether there are differences in the grasp of relevant policies of rural revitalization in different grades, it is necessary to conduct variance analysis on different grades' understanding of the policies of returning home employment and entrepreneurship. Among them, the mean of the freshman is 1.69 and the variance is 0.31, the mean of the sophomore is 1.89 and the variance is 0.61, and the mean of the junior is 1.78 and the variance is 0.48. The F value was 1.68 and the F crit value was 3.03 through the single factor analysis of variance in EXCEL. Because of F<F crit, it is believed that there is no significant difference in the degree of mastery of returning home employment and entrepreneurship policies among different grades.

Through the above analysis, it can be found that household registration and study in school do not have a direct impact on college students returning home to start businesses and employment, that is to say, business students' contribution to rural revitalization construction is limited, which is related to the unclear planning of rural construction prospects, unclear understanding of returning employment and entrepreneurship policies, and insufficient training of college students' returning employment and entrepreneurship ability. Therefore, under the policy of agricultural development, the corresponding education and teaching plan should be strengthened in the course reform of business data analysis in higher vocational colleges, and the effect of the course reform of business data analysis in higher vocational colleges can be reflected in the course evaluation.

4.2. Analysis of Professional Ability of Business Data Analysis for Business Students

As a new professional quality, business data analysis ability is widely used and difficult to learn. Students have the following problems in the learning process of business data analysis courses: First, business students lack thinking about mathematical logic problems, and it is generally believed that the learning of data courses is difficult, which will affect their participation in the course. This makes students have unclear thinking and weak awareness of overcoming difficulties when facing the complex data analysis operation process. Secondly, based on the complicated data and case scenarios, the lack of basic knowledge reserve in the early stage leads to the low completion of tasks and the feeling of being unable to design practical projects. In addition, the lack of agricultural data analysis cases leads to the lack of students' ability to analyze agriculture-related business data, which invisibly affects the professional momentum of students returning home to participate in the construction of digital countryside. Therefore, in the course reform of business data analysis, students' lack of knowledge in mathematical logic should be fully taken into account. By introducing real cases of agriculture-related business data analysis, students can fully gain a sense of experience and gain, and perceive the charm of project analysis itself from boring data.

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

4.3. Analysis of the Effect of Course Reform on Business Data Analysis under the Background of Agricultural Development

On the basis of the above subjective willingness and objective ability of business students involved in agriculture, the effectiveness of agricultural business data analysis course reform is evaluated under the theory of authenticity evaluation, and the external professional skills of business data analysis and the internal values of business and agriculture are considered after learning. From the aspects of mental cultivation, quality improvement, ability training, cultural confidence, etc., centering on the concept of "love rural areas - access to data - innovation", and in accordance with the principles of qualitative evaluation objectification and quantitative evaluation process, this paper explores the development process and differences of students' explicit data professional cognitive ability, agriculture-oriented social responsibility and recessive comprehensive innovation ability. Analysis of business data analysis course teaching reform under the ability of students to improve towards the target of development and the effect of "number business to develop agriculture".

In terms of data analysis ability of agricultural business, first, we should have the ability of agricultural market analysis and positioning, and be able to conduct market research, market positioning and positioning of agricultural products; The second is the ability to analyze agricultural business data, can combine agricultural product customer data, competition data, store operation data, and find useful business information; The third is to have the ability to control the risks of agricultural production and operation, to identify and evaluate the risks of agricultural product operation, and to feed back to guide agricultural product production; Fourth, it has the ability of agricultural logistics management, and classifies customers according to agricultural logistics cost control and inventory management. In terms of agricultural and business professional literacy, one is to love the countryside, optimistic about the long-term planning of digital rural construction, and show love for rural areas and farmers; Second, it has the spirit of agricultural and commercial labor, which is embodied in dedication, responsibility, and common progress. Third, there are agricultural and commercial ethics, which are manifested as credibility, compliance with the legal system, public ethics, strict private ethics and so on. In terms of competence of rural innovation, one is entrepreneurial planning and learning ability, ability to carry out rural entrepreneurial planning and problem solving; The second is the ability of team organization and collaboration, and the ability to organize and implement rural entrepreneurship.

5. Conclusions

Based on the subjective willingness and objective ability of higher vocational business students to return home to start businesses and employment, this paper builds a system around the effect of "data ability, professional quality of agricultural business and competence of agricultural innovation" in the course reform of business data analysis.

Acknowledgements

This research is supported by two projects, namely, the 2022 Chongqing Vocational Education Teaching Reform Research Project "Business Data Analysis Curriculum Reform and Practice Research in Vocational Colleges from the perspective of" Digital Commerce and Agricultural Development "(Project No. : GZ223055), the 2023 course Ideological and political research project of Chongqing College of Electronic Engineering, "Exploration of the Ideological and political Model of Business Data Analysis Course in Higher Vocational Colleges guided by Digital Village Construction" (Project number: 2023KCSZ006).

References

[1] Xie Wenshuai, Song Donglin, Bi Yifei. Digital village construction in China: internal mechanism, connecting mechanism and practice path [J]. Journal of Suzhou University (Philosophy and Social Sciences Edition), 2022, 43(02):93-103.
[2] Wu Xiaolong, Wang Han. Farmer digital literacy: Framework system, driving effect and cultivation path: An analytical perspective of competency theory [J]. Electronic Government, 2023(08):105-119.
[3] Chen Ni, Li Zhi. The dilemma of integrated development of digital rural Construction and modern agriculture and its solution [J]. Reform,2023(01):109-117.
[4] Wang Zhiyuan, Zhu Dequan. Logical proof and development direction of high-quality Vocational

ISSN 2663-8169 Vol. 6, Issue 2: 172-178, DOI: 10.25236/IJNDE.2024.060228

Education Service for rural revitalization [J]. Journal of Southwest University for Nationalities (Humanities and Social Sciences Edition), 2023, 44(02):205-212. (in Chinese)
[5] Zhang Xu, Wang Zhixiu. Reform practice of Ideological and political teaching in colleges and universities under the background of new agricultural science -- taking poultry production courses as an example [J]. Chinese Poultry, 2012, 44(12):121-124.
[6] Shu Yinghua, Wang Jianwu, Zhang Jiaen. Probe into the mode and method of Ideological and political teaching of Agricultural Specialized Courses -- taking "Agricultural Health Science" as an example [J]. Chinese University Education, 2022, No.377, No. 378(Z1):63-68.
[7] He Junying. Exploration and Practice of the Application of curriculum Ideology and Politics in higher vocational Skills-based courses -- A case study of Business Data Analysis courses in higher vocational colleges [J]. Journal of Yunnan Open University, 2019, 23(04):82-85+91.
[8] Ji-Wei F , School L .A Study on the reform of Commercial Law Course System under the Background of Civil Law[J].Education Teaching Forum, 2018.
[9] Zhang Xugang. Construction of production-education integration quality evaluation system in rural vocational education under the perspective of rural revitalization [J]. Journal of Vocational and Technical Education, 2019, 41(31):48-53.
[10] Jiang Yixian, Wang Bingan. Evaluation on the effect of SRC-T talent training in Universities serving rural revitalization [J]. Statistics and Management, 2019, 35(04):107-112.
[11] Calheiro D S, Meira-Belo L C. Effect of Re-sintering on the morphological and thermoluminescence properties of the ALOX-520 detector[J]. Applied radiation and isotopes: including data, instrumentation and methods for use in agriculture, industry and medicine, 2023:192.
[12] Liu Yingxia, Wang Ruochao. Effect Evaluation and Promotion Strategy of 1+X Certificate System [J]. China Vocational and Technical Education, 2021, (25):54-59.
[13] Guo Fang. Construction of evaluation system of ideological and political education Effect of vocational Education courses based on authenticity evaluation theory [J]. Journal of Vocational and Technical Education, 2002, 43(11):62-68.
[14] Li Haizong, Xiao Wenfang. Authenticity Evaluation and its coupling with Higher Vocational Student Evaluation [J]. Vocational and Technical Education, 2010, 31(01):37-41.