

Research Article

The Curriculum System of Business English Majors in Higher Vocational Colleges from the Perspective of the Internet of Things Business Model

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As the country pays more attention to higher vocational education, major higher vocational schools have begun to enroll in multiple majors, but many higher vocational schools do not have the admission requirements for business English majors. This paper is aimed at studying the business English curriculum system in higher vocational colleges from the perspective of the Internet of Things business model. This paper proposes a questionnaire survey analysis method based on the professional curriculum system of business English in higher vocational colleges. This algorithm is more pertinent than ordinary algorithms, and it is more explanatory for the research on the curriculum system of higher vocational business English. This method can more accurately explain the problems existing in the current higher vocational business English courses through detailed analysis of the course objectives, course implementation, and course evaluation. The experimental results of this paper show that the current curriculum system for business English majors in higher vocational colleges has problems in three aspects: curriculum objectives, curriculum implementation, and curriculum evaluation. 20% of the student group thinks that the curriculum system for business English majors has problems.

1. Introduction

The development history of domestic higher vocational education is short, and the level of development is low, so the curriculum model of higher vocational education has not formed a complete system. Part of the curriculum model is based on the introduction of foreign advanced models, and the other part is based on the domestic secondary vocational curriculum model, combined with the characteristics and connotations of higher education, to develop its own higher vocational curriculum model. At present, the mainstream curriculum modes of vocational education mainly include broad foundation, living module cluster curriculum mode, multi-integrated curriculum mode, and modular curriculum mode. In today's development of the Internet of Things, the business model based on the Internet of Things has also undergone great changes, which has a great impact on business English majors, especially for vocational colleges with

low conditions [1, 2]. Therefore, it is necessary to study the curriculum system of business English in higher vocational colleges.

Only by attaching importance to education can we have a better future. Based on the research on the curriculum system of higher vocational business English majors, this paper has the following innovations: (1) this paper proposes a questionnaire survey analysis method based on the curriculum system of business English majors in higher vocational colleges. Different from ordinary data analysis methods, the algorithm in this paper is more aimed at the study of the professional curriculum system of higher vocational colleges, and a factor with a higher degree of generalization is added to measure the design effect of the curriculum. (2) Research on the curriculum system of business English majors in higher vocational colleges is based on the perspective of the business model of the Internet of Things. Many literatures are used in the application of the Internet of

Things in high-tech, and there are few applications in education. This article mentions the impact of IoT business models on business English majors.

2. Related Work

The development of modern education has developed to a relatively high stage, not only in the details of the classification of education but also in the comprehensiveness of education. Therefore, there are many studies on curriculum design in education. A two-year follow-up study of prepubertal girls aged 7-9 years by Alwis and others found that curriculum design needs to take into account the age factors of the school subject, and curriculum design for younger ages needs to be more careful [3]. The purpose of Tan-Sisman et al.'s study was to comparatively investigate the curriculum development process in Singapore and Turkey in terms of administrative structure and educational reform. The results show similarities and differences in the centralized approach, administrative units, and their tasks in Singapore and Turkey in terms of the administrative structure of curriculum development [4]. In Zambia, Kalungia and others conducted a study of the local training curriculum system for pharmacists. Their study found that pharmacy education in Zambia offers many career prospects in hospitals, communities, drug manufacturing, drug regulation, public health administration, and academic development [5]. There are many research directions for business models, most of which are based on formula strategies. Stubbs' research is based on interviews with 14 Australian companies to enrich the understanding of the characteristics of sustainable business models that align profit and social impact [6]. The purpose of the study by Cosenz is to explore how system dynamics modeling can provide methodological support for the design of business models to better communicate the business strategy and manage performance. Their research found that the methodological support provided by system dynamics for business model design can effectively improve business strategy communication and performance management by adopting a systematic and flexible perspective to identify and analyze the main causal relationships between key elements [7]. A systematic literature review based on business model ontology is presented by Nikou and Bouwman to lay the foundation for the development of these applications. The research shows that the existing literature mainly focuses on the service platform component of the business model and its potential technical challenges, while the nontechnical business model components such as value proposition, organization, and revenue model have not received the attention that is considered necessary [8]. Lombardi and Schwabe research, develop, and analyze business models based on sharing economy principles. In this model, energy storage operators offer their energy storage systems to different types of customers. Every customer uses ESS for their single-use case. Furthermore, they found that larger battery sizes in terms of power and capacity are profitable and lead to increased revenue streams [9]. The purpose of the study by Prendeville and others is to explore how the ecodesign dilemma contributes to the evolution of ecodesign in companies.

Their research is based on the commercial Internet to explore the most efficient business models. They do this through an empirical study of the ecodesign decision-making process of individual companies [10]. Through related work, it can be found that the curriculum research on business English is more based on the school's curriculum and does not fully consider the needs of the student group. And under the Internet business model, there is no solution to the employment needs of students after graduation.

3. Professional Courses of Business English Courses

3.1. Business English. It has only been decades since the advent of business English, and the teaching of business English has only begun to develop in China for nearly 20 to 30 years. The development of practical business English courses is only in its infancy. However, with China's accession to the World Trade Organization (WTO) and the increasingly frequent commercial and trade exchanges with other countries in the world, the scope of activities has expanded, business English has become increasingly important, and the connotation of the concept of "business English" has become more and more abundant. "Business English" currently has various translations or corresponding terms such as "Foreign Trade English" in China. It is also called "International Business English." The word "International" is added to indicate that it is related to foreign business and trade. It can be seen that the course names are also extremely inconsistent. Due to the different backgrounds and motivations of business English learners, although "business English courses" under various names have common characteristics, they are often very different. Therefore, it can be said that there is currently no clear and consensus definition of "business English" [11, 12].

Because business English belongs to English for Special Purposes (ESP), the teaching of business English has its typical characteristics. By analyzing the needs of the market, schools, teachers, students, and other aspects, a real industry corpus, based on the real context, is used to cultivate students' ability to communicate effectively in English in a specific environment. The teaching of business English includes both theoretical teaching and practical teaching. In the practical teaching, there are both teaching of various practical courses for business English majors, and business English is used as a separate course in practical teaching [13, 14]. In this paper, the practical teaching of business English refers to the teaching of foreign trade negotiation courses by the teachers of the business English colleges of the higher vocational colleges studied by using the project teaching method. The project team formed by the students, under the guidance of teachers, prepares each work item in the foreign trade negotiation course textbook before the project, displays it during the project, and summarizes after the project.

3.2. Courses. Curriculum is the guarantee of professional development, the carrier of student training, and the most critical and direct stable factor affecting the improvement of students' quality. Vocational education curriculum is the overall

design and arrangement of the educational content, process, and standards by the organizer of vocational education. It is the blueprint and basic basis for various educational, teaching, practice, and practical activities of vocational education.

A major refers to a department in an institution of higher learning or an academic category in a secondary specialized school. There is still no complete consensus on how to build a major in a university. Specifically, professional construction, as an important part of cultivating senior professional talents, covers a wide range of contents, from the setting of disciplines and the introduction of teachers to teaching practice, practice opportunities, and student quality improvement. As for these contents, where efforts should be made depends on the society's requirements for talent quality and skills. For example, reforming and adjusting the professional direction, building high-quality teachers, expanding social cooperation, increasing practical projects and opportunities, promoting teaching, learning reward and punishment mechanisms, etc., are all methods that are of great benefit to the cultivation of higher vocational talents.

4. Questionnaire Survey Method Based on the Study of the Business English Professional Curriculum System

4.1. Cluster Analysis. The uses of clustering are very broad. In business, clustering can help market analysts to distinguish different consumer groups from the consumer database and summarize the consumption patterns or habits of each type of consumers. As a module in data mining, it can be used as a separate tool to discover some deep information distributed in the database and summarize the characteristics of each category. The methods of cluster analysis can be divided into hierarchical analysis and nonhierarchical analysis.

The analytic hierarchy process can be divided into two different methods: agglomeration type and branch type. The agglomeration type is to agglomerate similar samples one by one and finally aggregate them into several different categories. The branch type is the opposite. It starts to think that all the samples are of the same class and then divides them one by one and finally divides all the samples into several different classes. Here, we use an agglomerative clustering method to cluster the indicators.

Consider each of the m metrics as a category. For example, if there are indicators $\{A_1, A_2, \dots, A_m\}$ and r answer sheets, the indicators A_m are, respectively, represented by vectors in the dimension space, as shown in

$$A_m = \{a_{m1}, a_{m2}, \dots, a_{mr}\}^T. \quad (1)$$

Use D_{ij} to represent the distance between two classes, as in

$$D_{ij} = |A_i - A_j| = \sqrt{\sum_{a=1}^r (A_{ia} - A_{ja})^2}. \quad (2)$$

The distance matrix is listed in Table 1.

TABLE 1: Distance matrix.

	A_1	A_2	...	A_m
A_1	1	D_{12}	...	D_{1m}
A_2		1	...	D_{2m}
...			1	...
A_m				1

Select the smallest distance in the distance matrix, and combine these two categories to form a new variable A_{m+1} , as shown in

$$A_{m+1} = \frac{1}{2r} (A_{i1} + A_{j1}, A_{i2} + A_{j2}, \dots, A_{im} + A_{jm}). \quad (3)$$

Repeat step 2 until all indicators are merged into one category, and on this basis, the hierarchical structure of cluster analysis is shown in Figure 1. In Figure 1, the vertical axis represents the category of the samples and the horizontal axis represents the distance between the categories.

4.2. Principal Component Extraction. When we analyze and process the evaluation data, because there are too many indicators and there is a certain correlation between them, the information reflected by the observed data overlaps to a certain extent. And when the number of answer sheets is large, it becomes complicated to study the distribution law of answer sheets in high-dimensional space. Here, we apply principal component analysis to extract key indicators and replace more original variables with fewer comprehensive variables, and these comprehensive variables can reflect the information of the original variables as much as possible and are not related to each other. There are many factors considered in the questionnaire, so the extraction of principal components is considered. First enter the answer sheet value matrix, such as

$$X = \begin{bmatrix} X_{11} & \cdots & X_{1r} \\ \vdots & \ddots & \vdots \\ X_{m1} & \cdots & X_{mr} \end{bmatrix}. \quad (4)$$

For given m samples, find the correlation coefficient between samples. Each element in the correlation matrix is represented by the corresponding correlation coefficient, as shown in

$$S_j = \sqrt{\frac{1}{m-1} \sum_{i=1}^m (X_{ij} - \bar{X}_j)^2}, \quad j = 1, 2, \dots, r, \quad (5)$$

where X_{ij} is shown in

$$\bar{X}_j = \frac{1}{m} \sum_{i=1}^m X_{ij}. \quad (6)$$

Then, calculate the sample correlation matrix; first assume

$$y_{ij} = \frac{X_{ij} - X_j}{S_j}, \quad (7)$$

$$Y = (y_{ij})_{m \times r}. \quad (8)$$

Formula (9) can be obtained by calculation:

$$r_{ij} = \frac{1}{m-1} \sum_{i=1}^m \frac{(X_{ij} - X_j)}{S_j} * \frac{(X_{ik} - X_k)}{S_k}. \quad (9)$$

So we have to standardize the data array, as in

$$R = (r_{ij})_{r \times r}. \quad (10)$$

According to the obtained eigenvectors, the principal components are shown in

$$y_m = a_{m1}x_1 + a_{m2}x_2 + \dots + a_{mr}x_r. \quad (11)$$

Among the m principal components, the sum of the contribution rates of the previous q principal components is α , as shown in

$$\alpha = \frac{\sum_{i=1}^q \lambda_i}{\sum_{i=1}^m \lambda_i}, \quad (12)$$

where λ_i is the i -th principal component. When $\alpha > 85\%$, it can be considered that the principal components can represent all the information of the original data, so the q principal components selected in this article are shown in

$$Z_j = a_{1j}y_{j1} + \dots + a_{rj}y_{jr}. \quad (13)$$

The selected first q principal component sample values are shown in

$$Z_{ij} = \sum_{i=1}^r y_{ij} a_{ij}. \quad (14)$$

By repeating this process, the principal component indicators that play a leading role, which are less than the original number of indicators, can be extracted from each type of indicators.

4.3. Rough Set Attribute Reduction Algorithm. The rough set attribute reduction algorithm only selects the conditions with high attribute importance to add to the reduction and does not consider the redundancy between the conditional attributes in the reduction. The reduction is often not necessary; that is, it contains redundant attributes. The rough set attribute reduction algorithm makes full use of the theoretical knowledge of rough sets. We can make assumptions like this: suppose to delete a certain set of attributes in the data and then judge the importance of this set of attributes by

observing the decision set. When a group of attributes is deleted, the decision set does not change, and the importance of this group of attributes is not significant. However, when a certain group of attributes is deleted, the decision set has changed, and the group of attributes plays a great role [15].

The C set represents conditional attributes, and the division of U generated by R_C is defined as

$$\frac{U}{R_C} = \{C_1, C_2, \dots, C_l\}. \quad (15)$$

For the knowledge system S , the D set represents the decision attribute; then, define a binary equivalence relation R_D of D , as shown in

$$xR_D y \Leftrightarrow f_j(x) = f_j(y), \quad \forall d_j \in D. \quad (16)$$

Then, the division of U generated by R_D is defined as

$$\frac{U}{R_D} = \{D_1, D_2, \dots, D_j\}. \quad (17)$$

Next, use $\text{POS}_C(D)$ as the positive domain of the condition attribute set C of the decision attribute set D , as shown in

$$\text{POS}_C(D) = \bigcap_{j=1}^J R_C(D_j). \quad (18)$$

Define γ to satisfy

$$\gamma_C(D) = \frac{|\text{POS}_C(D)|}{|U|}. \quad (19)$$

Therefore, the importance of a certain attribute subset C_1 with respect to D is defined as

$$\sigma_{CD} = \gamma_C(D) - \gamma_{C-C_1}(D). \quad (20)$$

5. The Development of Business English from the Perspective of the Internet of Things Business Model

5.1. Introduction of Related Technologies

5.1.1. Internet of Things. The Internet of Things itself represents the development direction of the next generation of information technology, but the Internet of Things is not a new concept. Some remote automation control applications in the early last century can be regarded as the prototype of the Internet of Things application [16–18]. So far, there have been more and more research results on the theory of the Internet of Things in academia. The application field of the Internet of Things involves all aspects, and the application in infrastructure fields such as industry, agriculture, environment, transportation, logistics, and security has effectively promoted the intelligent development of these aspects,

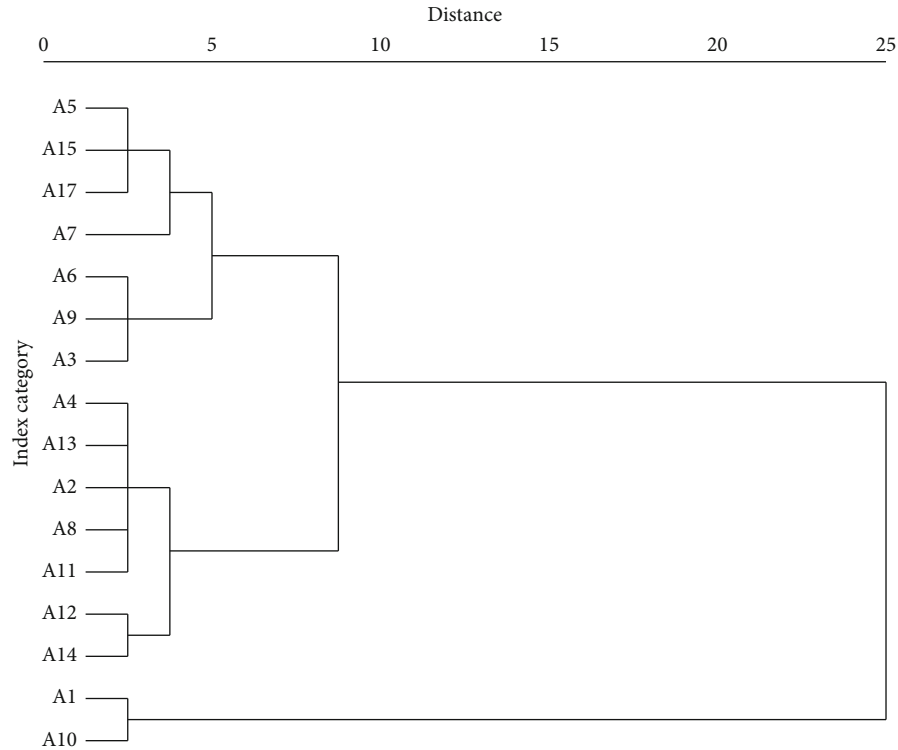


FIGURE 1: Results of cluster analysis of indicators by the shortest distance method.

making the limited resources more reasonable, thereby improving the efficiency and effectiveness of the industry. In short, the Internet of Things is a new type of information-based intelligent technology that connects various sensors with the Internet.

According to the definition of the Telecommunication Standardization Sector of the International Telecommunication Union, the Internet of Things (IoT) is an infrastructure that provides information transmission services [19, 20]. It provides interconnection services for interconnecting physical and virtual objects on a global scale based on existing communication technologies [21, 22]. According to the definition of ISO/IEC/JTC1WG10, the Internet of Things is an infrastructure that connects objects, people, systems, and information systems and can intelligently process and respond to information in the physical and virtual worlds. The content of the latter is an expansion of the former, but its core connotation is the same. That is to say, the Internet of Things is initiated and transmitted by things actively, transmits all kinds of perceived information in real time through the network, and uses computer technology to timely control the information of massive data, so as to achieve the Internet that communicates between people and things and things and things. Its development is shown in Figure 2.

In Figure 2, we can see that the development of the Internet of Things is inseparable from the development of the Internet. In the era of 2G and 3G, there is no concept of the Internet of Things. Even if there is, the network at that time is not enough to support the Internet of Everything. In the 4G era, the speed of the network has been very fast,

and the concept of the Internet of Things has become more and more familiar to more and more people. Now, entering the 5G era, not only has the technology of the Internet of Things been greatly developed but also its network transmission protocol has reached global unity, which means that the Internet of Everything is no longer science fiction. Table 2 shows the bearer methods and applications of the Internet of Things.

5.1.2. Business Model. The term business model was first proposed in the 1950s. After entering this century, the business model began to be discussed more widely. On the one hand, most discussions on business models are not academic in nature; on the other hand, the views of industry practitioners are rarely adopted in academic research. This has also led to huge differences in the definition of the term business model among academics and industry practitioners. The definition of the business model can be roughly summarized as how one party in the market produces a certain commodity or service and provides it to another party in the market in order to obtain some form of return [23]. Although the definition of the business model has not yet reached a consensus in academia and industry, this paper summarizes and refines on the basis of consulting various different theories the common business model characteristic elements from different theories.

After comparing and analyzing the business model definitions from different perspectives as shown in Figure 3, this paper gives the business model definition from the network perspective of system integration. That is, the business model refers to, in order to maximize customer value, integrate

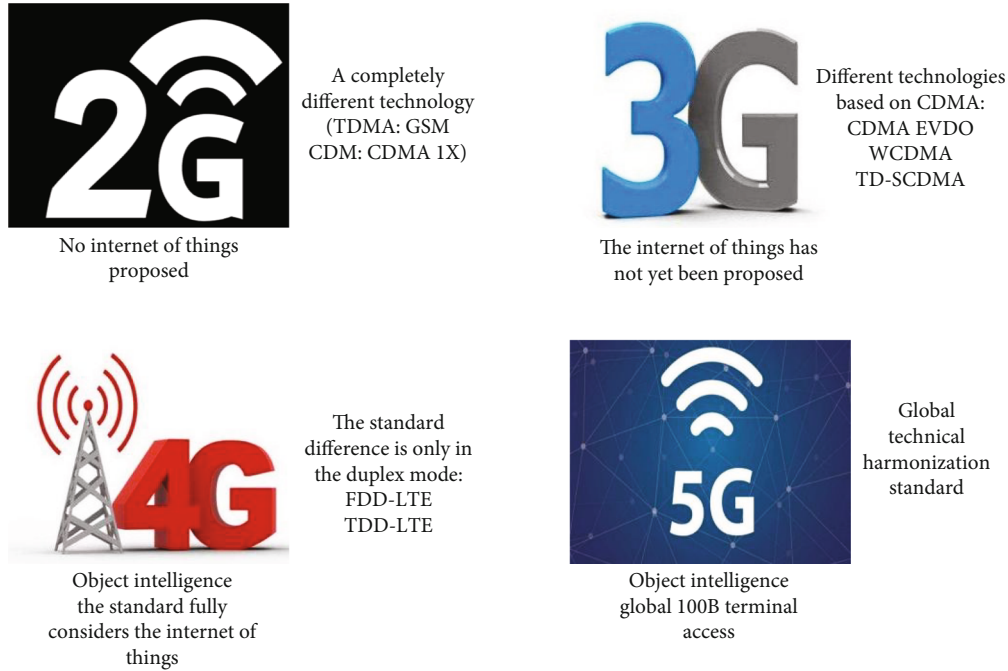


FIGURE 2: The development trend of the Internet of Things.

TABLE 2: Trends of Internet of Things bearing modes.

Market segmentation	Related applications	Application characteristics
3%	HD video	Ultrahigh ARPU value
12%	Video surveillance, medical care, smart city	High ARPU value
25%	Smart homes, smart buildings, Internet of vehicles, M2M nodes	Middle and low ARPU
60%	Public utilities, industry monitoring, wearables, device tracking, sensing	Low ARPU

various resources and capabilities inside and outside the organization, and form an efficient operation system with unique core competitiveness, an overall solution designed by an organization that ultimately realizes value in the form of products or services to achieve sustainable profit goals.

The business model is the process of realizing enterprise value. The business model carries the entire process of an enterprise from the initial idea or product prototype to the product entering the market and finally being purchased by consumers and generating profits. Studying the business model of the enterprise will help the enterprise to identify target customers, optimize the product structure, improve the utilization efficiency of enterprise resources, improve the service level of the enterprise, and optimize the combination of sales channels, create good customer relationships, optimize customer experience, reduce production costs, and optimize corporate organizational structure.

The research on the constituent elements of the business model plays an important role in the modeling of the business model, and the conceptual model of the business model can guide business model innovation in the corporate world. Therefore, it is necessary to conduct in-depth research on the constituent elements of the business model. Based on a large number of studies of relevant domestic and foreign lit-

erature, this paper summarizes the existing research results on the components of business models, as shown in Figure 4.

In Figure 4, from 1996 to 2012, the researches related to business models are selected for analysis each year. It can be found that the research on business models is more about e-commerce types and less about other types of enterprises.

Among them, Larcher et al. [24] proposed that the business model mainly contains four key elements. They are value proposition, key process, key resource, and profit model, and they can create and transmit value in the process of interaction.

The four-element theory of the business model is shown in Figure 5, which is mainly composed of the following four modules:

Customer value proposition: customer value proposition refers to the way a company generates value for customers and determines how far the company can develop in the future.

Profit model: the profit model refers to the way in which the enterprise can bring value to customers and at the same time realize its own profit.

Key resources: key resources refer to key resources such as technology, equipment, products, and personnel required to create value for customers.

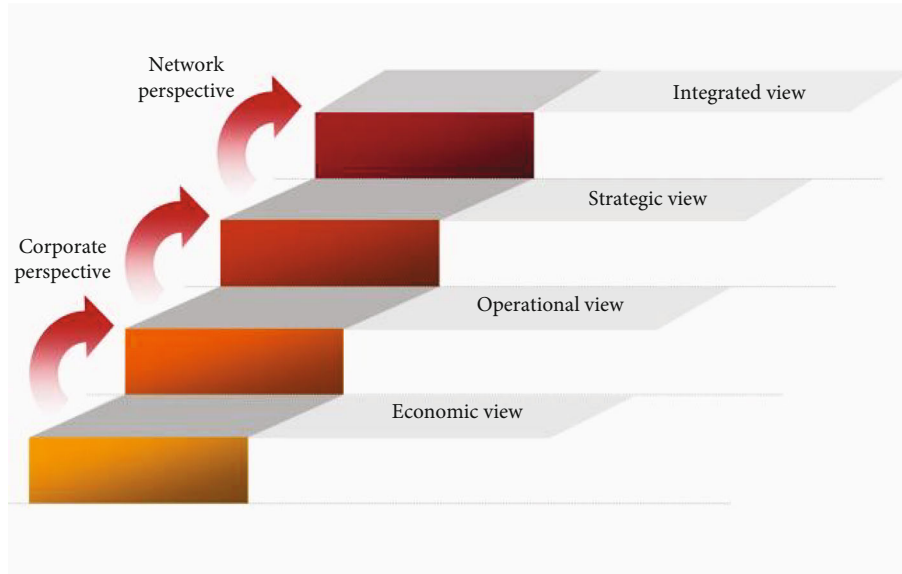


FIGURE 3: Business model definition development trajectory.

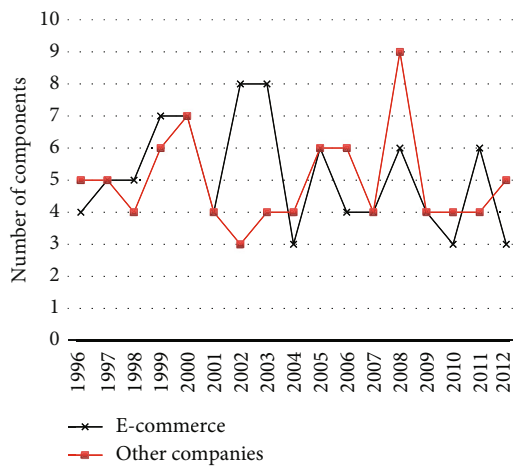


FIGURE 4: Elements of related research business models.

Key process: the key process refers to the safeguard measures and processes required by the enterprise to create value for customers, including a series of internal systems and processes within the enterprise, including research and development, production, sales, after-sales, performance appraisal, and system specifications.

Prendeville et al. [10] put forward the famous “smile curve” theory and used it as Acer’s corporate development strategy. They proposed that if an enterprise wants to achieve long-term development in the fierce market competition, it must give up low value-added work and transfer its energy and resources to high value-added work. If the added value of the entire product life cycle is plotted, it looks like the mouth shape of a smile, so this theory is called the “smile curve” theory. Through the perspective of the “smile curve,” enterprises can clearly know their own position in the value chain and then provide some references for the long-term development of enterprises [25].

As shown in Figure 6, observing the schematic diagram of the “smile curve” can be found: the middle of the curve is the manufacturing part, the value generated is relatively low, and it belongs to the low value-added area. On the left is the R&D and technology part, which generates relatively high value and belongs to the high value-added area. On the right is the sales and service segment, which generates relatively high value and is also classified as a high value-added area. It can be clearly seen from Figure 6 that if a company wants to expand its own value, it should try to extend in the direction of both ends of the “smile curve.” That is, on the one hand, it extends to the left to expand its technological advantages, and on the other hand, it extends to the right to improve the experience brought by the service.

5.1.3. *IoT Business Model.* The formation and development of any IoT business model are closely related to external environmental factors including political, legal, economic, social, and technological factors. Among them, the policy and legal environment provides healthy and stable operating conditions for the business model. The economic environment provides capital and material guarantees for the operation of business models and is the source of profits. The social environment sets the direction for the development of business models to meet changing social needs. The technological environment is the fundamental driving force for the improvement and innovation of business models.

6. Higher Vocational Business English Course System

6.1. *Survey on the Current Situation of the Business English Curriculum System in Higher Vocational Colleges.* Only by clarifying the current situation of the business English curriculum system in higher vocational colleges can the improvement strategies of the higher vocational business English curriculum system be effectively proposed and

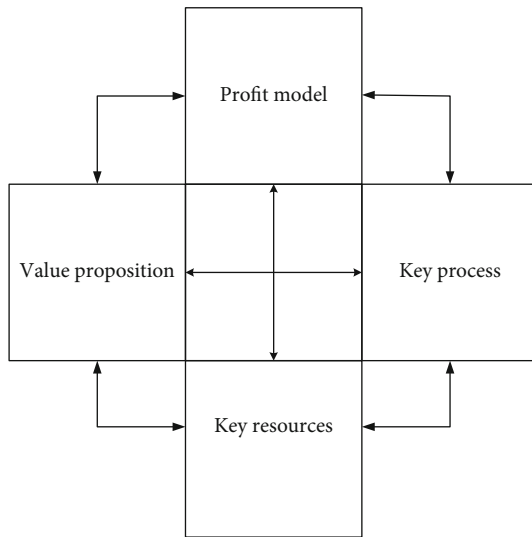


FIGURE 5: Four elements of a business model.

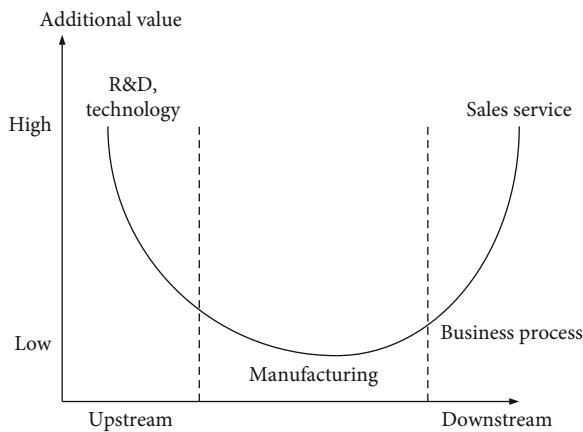


FIGURE 6: "Smile curve."

implemented from the perspective of the business model of the Internet of Things. Through the sample survey, we objectively understand the actual state of the business English curriculum system in higher vocational colleges and take the hotel management undergraduate curriculum system indicators from the perspective of the Internet of Things business model constructed in this paper as the expected state. The two are compared, and the ways and methods to improve the current situation of the business English curriculum system in higher vocational colleges are discussed through the perspective of the business model of the Internet of Things.

According to the above index system, through the questionnaire design, the designed questionnaire consists of four major parts, namely: personal basic information, course objectives, course implementation, and course evaluation, with a total of 15 questions. The question format is based on single choice. The specific composition of the questionnaire content is as follows.

The first part is basic personal information. A total of 3 questions are designed in this part, including the subject's major, batch type, and grade.

The second part is "course objectives." According to the index system constructed in this paper, four topics are designed in this part, mainly involving "knowledge and skill goals" and "emotion goals." Through these topics, try to understand the teaching results of "knowledge and skill goals" and "emotional goals" in higher vocational business English teaching.

The third part is "course implementation." According to the index system constructed in this paper, four topics are designed in this part, mainly involving "hardware conditions" and "software conditions." Through these questions, try to understand the construction and use of "hardware conditions" and "software conditions" in business English teaching in higher vocational colleges.

The fourth part is "course evaluation." According to the index system constructed in this paper, four topics are designed in this part, mainly involving "teaching evaluation" and "course evaluation." Through these questions, try to understand the design and implementation of "teaching evaluation" and "course evaluation" in higher vocational business English teaching.

The details are shown in Table 3.

Before obtaining primary research data by means of a questionnaire, a test is required. First, after the first draft of the questionnaire is completed, the expert group is asked to review it to determine whether the questionnaire has face validity and content validity. Cronbach's coefficient is a statistic that refers to the average of the half-half reliability coefficients obtained by all possible item division methods of the scale. It is the most commonly used reliability measurement method. Usually the value of the Cronbach coefficient is between 0 and 1. If the coefficient does not exceed 0.6, it is generally considered that the internal consistency reliability is insufficient; when it reaches 0.7-0.8, it means that the scale has considerable reliability, and when it reaches 0.8-0.9, it means that the reliability of the scale is very good. After verification, the overall coefficient of this student questionnaire is shown in Table 4. Therefore, through the test of the test results, the questionnaire has certain reliability and validity.

The methods of the questionnaire survey are the distribution of online questionnaires and the actual distribution of surveys. The subjects of the survey are the first-, second-, and third-year students from three higher vocational business English majors. A total of 400 questionnaires were distributed, all of which were recovered, the recovered questionnaires were screened roughly, blank answers and those with blank basic information were regarded as invalid questionnaires, 17 invalid questionnaires were excluded, and 383 valid questionnaires were finally obtained, with an effective rate of 95.75%, as shown in Figure 7.

6.2. Investigation Results

6.2.1. Analysis of the Current Situation of Curriculum Objectives. According to Figure 8, it can be seen that although colleges and universities pay more attention to the teaching of knowledge and skills, they are not perfect in the teaching of knowledge application and skills, and

TABLE 3: Questionnaire setting table.

Course objectives	Knowledge and skill objective A1	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Complete, basic system operation skills A2	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Harmonious communication between teachers and students A3	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Interested in learning and enterprising A4	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
Course implementation	Make full use of professional operating system B1	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Make full use of teaching laboratory B2	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Industry is deeply involved in B3 in terms of teaching resources	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Flexible use of teaching methods B4	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
Course evaluation	The teaching attitude is generous, the appearance is dignified, and he is a good teacher C1	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Teachers and students interact actively, and the atmosphere is active and orderly C2	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	The quality of the teaching materials is high, and the lesson plans are well prepared C3	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
	Heuristic teaching, combining theory with practice C4	① excellent, ② good, ③ fair, ④ poor, ⑤ very bad
Basic information	School	A: school, B: school, C: school
	Professional	Fill in your major
	Grade	A: first grade, B: second grade, C: third grade

TABLE 4: Cronbach's coefficient of the test results of the student questionnaire.

Variable	Cronbach's alpha	Number of items
Overall reliability of the questionnaire	0.897	12
Course objectives	0.91	4
Course implementation	0.784	4
Course evaluation	0.69	4

more research needs to be done in practical teaching. Learning interest and enterprising spirit determine to a certain extent students' love for hotel management major. The degree of harmony between teachers and students affects the teaching effect in the classroom. Although it has paid attention to the cultivation of students' interest and initiative in learning and the maintenance of teacher-student relationship, there is still room for improvement. In terms of knowledge and skill transfer, the implementation effect of practical teaching and application ability training is not good. In terms of emotional goals, there is room for improvement in the enhancement of students' professional interest.

6.2.2. Analysis of the Current Situation of Curriculum Implementation. As can be seen from Figure 9, in the teaching process, teachers will teach the course content in combination with industry needs and hotspots of the times, but they are not fully integrated and the degree of integration is relatively shallow. Therefore, in the teaching process, in addition to the teaching materials as the center, more supplements should be supplemented by industry needs and frontier knowledge of disciplines. In the teaching process, the participation of teachers and talents in colleges and uni-

versities is not enough. Even if there are excellent industry personnel to teach courses in colleges and universities, they are limited to the sharing of industry experience and experience, and their participation in courses and teaching needs to be deepened. And in the teaching process, there are few types of teaching methods used, and the scope of application is not wide enough, which needs to be further strengthened. In terms of hardware conditions, the use of professional operating systems is not sufficient, and the construction and use of teaching laboratories need to be improved. In terms of software conditions, in the construction of teachers' team, the degree of industry participation is low, and the degree of integration between the teaching content of industry teachers and the teaching objectives of actual courses is low. The use of teachers' teaching methods needs to be improved.

6.2.3. Analysis of the Current Situation of Course Evaluation. As can be seen from Figure 10, in the teaching process, the problem of emphasizing theory over practice still exists, and it is not optimistic. And in the classroom, the teaching of professional content is the main method, and the proportion of training students' comprehensive quality is relatively low. In terms of course content, the degree of integration with industry needs and the updating of cutting-edge knowledge are insufficient. In terms of curriculum structure, insufficient attention is paid to the proportion of practical curriculum and the cultivation of students' comprehensive quality.

6.3. Countermeasures and Suggestions for the Higher Vocational Business English Course System Based on Analysis Results. In the aspect of goal expression, it should be clear, including not only the content to be learned but also the degree of learning that should be achieved. Clear

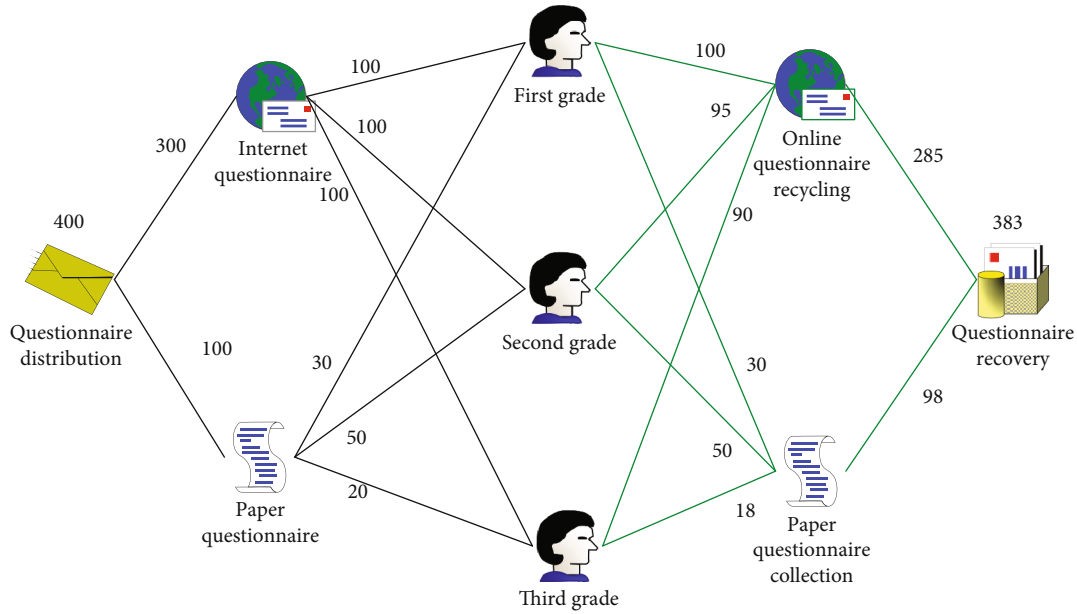


FIGURE 7: Schematic diagram of questionnaire distribution and recovery.

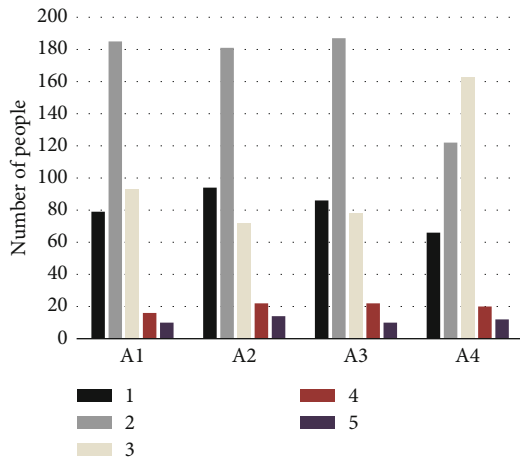


FIGURE 8: Analysis of the current situation of curriculum objectives.

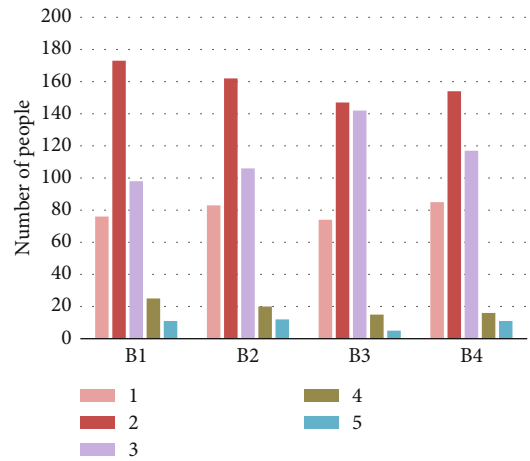


FIGURE 9: Analysis of the current situation of curriculum implementation.

and unambiguous presentation of course objectives is the foundation of effective teaching.

In the course of curriculum setting, while fully considering the subject standard, we should also consider the industry demand standard and combine the two effectively to ensure the scientific nature of the curriculum setting. Changing the matching mode of practical and theoretical courses creates more opportunities for applying theory to practice and then rise to theory and avoid the phenomenon of low efficiency of practical courses. While cultivating students' professional ability, they should also pay attention to their own development and improve their comprehensive ability.

During the implementation of the course, the construction of the teaching laboratory should be improved and the opportunities for use should be increased, so that students can fully practice and improve the learning effect of students. The industry's participation in college teaching should not be limited to excellent staff teaching work experience in

colleges and universities, and the industry experience and knowledge acquired by the industry should be fully integrated into the course teaching. It should really effectively use a variety of teaching methods, not mere formality, and take the improvement of teaching effect as the test standard.

7. Conclusions

The development of technology will enrich people's lives, but the development of education is what really needs long-term development. In the context of global interconnection, business English majors have great employment opportunities and have developed by leaps and bounds. This article is based on the research on the curriculum system of business English majors in higher vocational colleges from the perspective of the business model of the Internet of Things. This article first introduces the background and

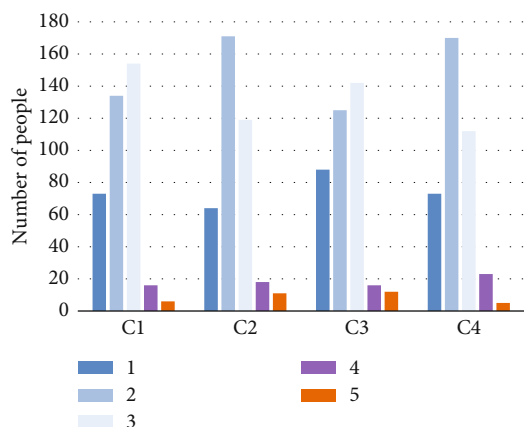


FIGURE 10: Analysis of the current situation of course evaluation.

significance of this article and then analyzes the domestic and foreign research on the business model of higher vocational education and the Internet of Things. After that, the important concepts of this article, business English, courses, etc. will be introduced. Then, the questionnaire analysis algorithm proposed in this paper is introduced in detail, combined with cluster analysis, principal component analysis, and rough set attribute reduction algorithm. Afterwards, it explains the business model of the Internet and analyzes it in conjunction with the business English major. Finally, the course design of business English is investigated and analyzed. The analysis results suggest that the current higher vocational business English education still needs to introduce talents and develop more practical courses. At the same time, this paper also has some shortcomings, mainly because the survey in this paper is only for the student group, and the follow-up research can add interviews and increase the investigation and analysis of teachers and school leaders.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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