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Retraction

Retracted: Study on the Grammar System of Teaching Chinese as a Foreign Language in the Background of Information Technology

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] Y. Fang and L. Shen, "Study on the Grammar System of Teaching Chinese as a Foreign Language in the Background of Information Technology," *Security and Communication Networks*, vol. 2022, Article ID 6951714, 10 pages, 2022.

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Research Article

Study on the Grammar System of Teaching Chinese as a Foreign Language in the Background of Information Technology

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In order to improve the convenience and reliability of teaching Chinese as a foreign language, this study applies information technology to the intelligent system of teaching Chinese as a foreign language and the picture semantic recognition of teaching Chinese as a foreign language. Moreover, this paper proposes a sparse neural network SRSCNN, which shortens the training time without affecting the reconstruction effect and calculation speed, and improves the intelligent processing of teaching resources in the teaching process. When designing the overall framework of the system, a hierarchical and modular design method is adopted to make the logical structure of the whole system reasonable and the process clear. The study of the test results shows that teaching Chinese as a foreign language system based on information technology proposed in this paper has a good teaching effect and can effectively promote the reform of teaching Chinese as a foreign language.

1. Introduction

In teaching Chinese as a foreign language, the importance of grammar teaching materials is self-evident. This article selects these nine general grammar textbooks for a comprehensive and detailed comparison, which has a certain research value, mainly in the following aspects.

For starters, a complete and extensive analysis of each textbook's complicated sentence structure will aid instructors in immediately grasping the benefits and drawbacks of each textbook, making it easier for them to pick textbooks that are appropriate for their teaching requirements. It is also more favourable to the integration of the benefits of these nine textbooks, digestion, and absorption to construct its own flawless complex sentence teaching method [1]. Second, pupils find it difficult to pick from a vast variety of grammar texts. A full comparison will assist students in grasping the benefits and drawbacks of each textbook and in acquiring entire difficult sentence understanding. Furthermore, it may improve students' knowledge, comprehension, and usage of complicated phrases, enhancing their overall ability to utilize Chinese [2]. Third, since there are few results of comparative research on these grammar textbooks in academia at present, the research space is relatively large, and we urgently need to fill this gap. Therefore, the research in this paper will help fill in the research gap in time and facilitate future generations to continue to dig deeper. Finally, a comparative study of complex sentences in grammar textbooks of Chinese as a foreign language can promote the teaching of complex sentences in Chinese. However, in turn, it can also be helpful to the study of complex sentences in the field of Chinese ontology, and it can improve from practice to theory and realize the perfection of practice guiding theory [3].

Theoretical grammar, as the name suggests, is a grammar that focuses on theoretical elaboration and construction. Unlike teaching grammar, we can generally call it expert grammar. It studies language as a kind of law and system, explains the rules, and makes theoretical generalizations and explanations of the system and the rules. It is to study and explore the grammatical problems in the language in order to discover some grammatical rules that have not yet been understood or are not well understood. It is committed to

building an orderly, regular, and systematic system that incorporates observed phenomena and good research results. Therefore, theoretical grammar needs constant innovation and constant discovery of new phenomena and problems. Its essence is to explain the structural laws and internal motivations of human language, analyze the language structure, and promote the understanding of language. Teaching grammar is a service, which is closely related to classroom teaching so it can also be called classroom grammar or school grammar. Teaching grammar is the motivation for learners to learn, and the teaching system is established by the basic conditions of grammar. Moreover, teaching grammar is prescriptive, while theoretical grammar is research. Teaching grammar is affected by the actual situation of teaching and does not delve into the grammatical interpretation. It pursues simplicity, clarity, essence, and appropriateness. Generally speaking, it adopts a more eclectic expression for more controversial issues. While theoretical grammar guides, promotes, and enriches teaching grammar, it can also do further research on the new problems rose by teaching grammar. The relationship between the two can be summarized as follows: "(1) teaching grammar can be independent of any theoretical grammar; (2) teaching grammar and theoretical grammar have different goals; (3) teaching grammar can provide research topics and driving force for theoretical grammar; and (4) teaching grammar can absorb nourishment from theoretical grammar."

This article combines intelligent information technology to construct the teaching system of the grammar of teaching Chinese as a foreign language, to change the situation of traditional teaching of Chinese as a foreign language, and to improve the effect of teaching Chinese as a foreign language.

2. Related Work

According to different teaching objects and teaching purposes, pedagogical grammar can be divided into mother tongue pedagogical grammar and second language pedagogical grammar, that is, teaching grammar of Chinese as a foreign language. It also has the characteristics of pedagogical grammar, but at the same time, it is not completely consistent. Literature [4] pointed out that "Teaching Chinese as a foreign language is a grammar for teaching Chinese as a second language. It is an applied pedagogical grammar. The learning object can be either foreign students or teachers who are or will be engaged in teaching Chinese as a foreign language student." The teaching grammar of Chinese as a foreign language mainly reflects the characteristics of Chinese as a second language teaching or foreign language teaching, which is different from the Chinese ontology-oriented teaching grammar system and Chinese theoretical grammar. The object of learning can be foreign students or teachers engaged in teaching Chinese as a foreign language. Generally speaking, the foreign Chinese grammar used by teachers is called foreign Chinese teaching grammar [5]. Regarding the theoretical basis of pedagogical grammar of Chinese as a foreign language, literature [6] has discussed and summarized. It includes Chinese ontology research, second language acquisition and cognition research, teaching research, grammar theory research, and linguistics and comparative linguistics. The research is the theoretical basis and source of teaching Chinese as a foreign language and pedagogical grammar. Teaching Chinese as a foreign language has features such as going from meaning to form, emphasizing grammar assembly, being a conditional grammar, and the need to speak Chinese grammar in interlingual comparison [7]. Literature [8] provides a comprehensive description and detailed summary of the characteristics of teaching grammar of Chinese as a foreign language in "Eight Characteristics of Teaching Grammar for Non-native Speakers," which provides a basis for the later delineation of the pedagogical grammar of Chinese as a foreign language. These eight characteristics can be summarized as practicality, emphasis on formal meaning, emphasis on textual pragmatics, refinement of rules and adequate conditions of use, both description and interpretation, comprehensiveness of interlingual contrast, emphasis on acquisition research, and good use of statistics methods and test methods. It can be seen from this that the study of teaching grammar of Chinese as a foreign language is mainly the study of the combination and application of the Chinese language. The basic requirement is to be practical and conducive to the understanding and application of students. Some grammatical errors or mistakes that students often make in their learning, as well as the language difficulties they often encounter, should be the object of research and discussion on the grammar of teaching Chinese as a foreign language [9]. It can be seen that its basic purpose is to facilitate teaching, help students understand language points, expression functions, and usage conditions and then master the language they learn so that students can smoothly transform the grammatical rules they learn into language expression [10].

Literature [11] mentioned the "three characteristics" when talking about the basic requirements of pedagogical grammar: one is standardization, the other is stability, and the third is practicality. Literature [12] pointed out that it should be systematic. The items and ordering of grammatical points in teaching grammar are also important basis for writing language points. Generally speaking, when ordering grammatical points, the important factor is the degree of difficulty of the grammatical points. As for how to define the difficulty, Deng Shouxin summarized it from five aspects: structure, semantics, cross-language differences, language comprehension, and pragmatic function. The key points and principles of ordering grammatical points in teaching are introduced, which will play a certain guiding role in the selection of grammatical points and data statistics for scholars in the future. The literature [13] summarized six principles for the compilation of grammatical points, namely: pertinence principle, moderate principle, decentralized principle, gradual principle, point-to-face combination principle, and small quantity principle. Since the teaching materials include foreign students, the difficulty of the language points should be adapted to the needs and levels of the students, so the layout of the grammar points in

the teaching materials should also refer to the Chinese grammar level syllabus. As the main target of teaching Chinese grammar as a foreign language is teachers who are engaged in teaching Chinese as a foreign language and foreign students, the difficulty of teaching grammar points needs to be adapted to the needs and level of the target [14]. The explanation of language rules and use should be straightforward and clear, and the description of language phenomena should be excellent at summarizing the circumstances and norms of language usage in brief and plain language. It is preferable not to bring up any current academic squabbles or unsolved difficulties [15]. Literature [16] discovered that several grammar points in primary Chinese textbooks are incomplete, that there are too many language options, that no one is ignored, and that there is no concentration. Some textbooks place a premium on quantity and substance, but not the most critical factors. The textbook includes basic and essential grammatical principles. Literature [17] proposed that the arrangement of foreign Chinese grammar items should be controlled in a quantity. Therefore, grammar textbooks for teaching Chinese as a foreign language should control the amount of grammatical points and do not have to cover everything but should make some choices and grasp the important and difficult points. On the other hand, the expression should be moderate. According to the characteristics of teaching grammar in Chinese as a foreign language, use concise and clear language to describe and explain the grammatical points and choose formulas for some expressions that can be expressed by formulas. At the same time, the use of professional terminology should be moderate, and professional terminology should be used as little or not as possible. The arrangement of grammar points is not required to be complete, as long as it can basically solve the problems in students' learning and realize the application.

3. Application Improvement of Information-Based Image Semantic Text Recognition in Teaching Chinese as a Foreign Language

This article applies information technology to Chinese as a foreign language image semantic recognition to improve the resource convenience and reliability of teaching Chinese as a foreign language, which will be explained in detail below [18].

The common image degradation process $X \longrightarrow Y$ can be expressed as follows:

$$Y = HX\Delta n. \tag{1}$$

where H is the degradation factor, which represents the process of deformation, blurring, and downsampling of the degradation model, and n is noise [19].

The degradation model is shown in Figure 1.

Image SR is the inverse process of image degradation, and the solution process is an ill-posed problem. SR reconstruction based on deep learning can learn the end-to-end mapping relationship between high-resolution images, and its algorithm framework is shown in Figure 2.

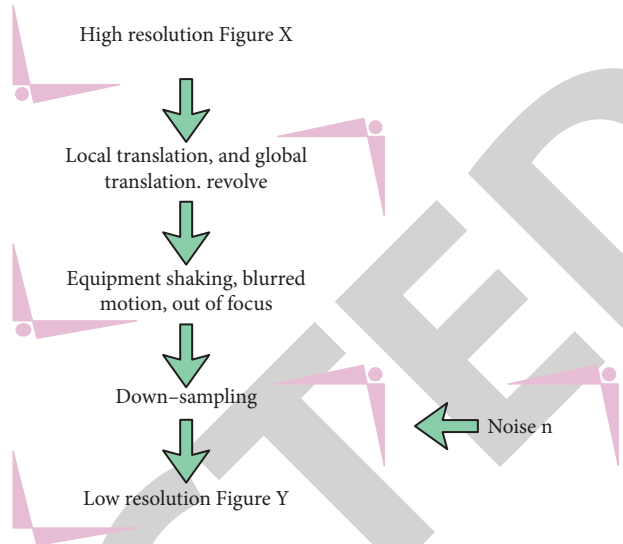

Figure 1: Image degradation model.

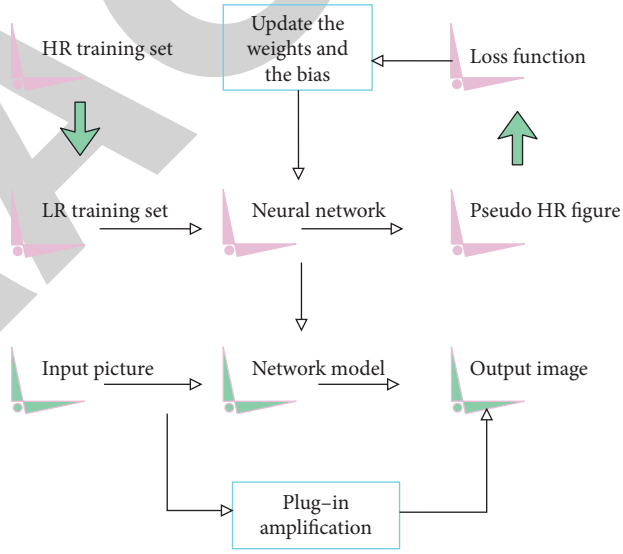

Figure 2: SR reconstruction algorithm framework based on deep learning.

Image quality evaluation provides metrics for algorithm analysis and comparison and system performance in the image processing system. Image quality evaluation has two branches: subjective evaluation and objective evaluation. Subjective evaluation is the subjective and qualitative evaluation of the image by the observer. The objective evaluation is generally the image quality quantified value calculated with the aid of a specific mathematical model. At the same time, the consistency between the quantitative value of image quality and subjective observation value is also a common index to evaluate image quality. Commonly used objective evaluation criteria are peak signal-to-noise ratio (PSNR), information entropy (IE), and structure similarity (SSIM)

If it is assumed that the pixels of the original image I and the test image K are $m \times n$, then [20]

$$\mathrm{MSE} = \frac{1}{mn}\sum_{i=1}^{n}\sum_{j=1}^{m}\|K(i,j) - I(i,j)\|^2,$$
$$\mathrm{PSNR} = 10\lg\left(\frac{\mathrm{MAX}^2}{\mathrm{MSE}}\right). \tag{2}$$

where MSE represents the mean square error of the image, MAX represents the maximum gray value of the image, and MAX is 255 in the 8 bit grayscale image.

PSNR represents the degree of image distortion; the unit is dB; and the larger the PSNR value, the smaller the distortion between the test image and the reference image, and the higher the image quality. This method measures the image quality from the perspective of global statistics of the image and does not consider the local visual factors of the human eye, so the PSNR evaluation result is inconsistent with the subjective human eye. Compared with PSNR, SSIM is an objective evaluation index of image quality that conforms to the characteristics of the human visual system. According to the correlation between image pixels, the structural similarity between the test image and the reference image is constructed, and the brightness, contrast, and structural similarity are defined by the mean value, standard deviation, and covariance of the image. The combination of three similarities is the SSIM indicator:

$$\mathrm{SSIM}(i,j) = [l(i,j)]^{\alpha}[c(i,j)]^{\beta}[s(i,j)]^{\gamma}. \tag{3}$$

where $l(i, j)$ is the brightness similarity, $c(i, j)$ is the contrast similarity, $s(i, j)$ is the structure similarity, and the parameter $\alpha\Delta\beta\Delta\gamma$ is generally set to 1.

The SR reconstruction of teaching Chinese as a foreign language image is the preprocessing part of automatic target recognition, and the quality of the salient region is more important than the quality of the whole image. Therefore, this paper combines gradient magnitude similarity deviation (GMSD) with saliency map detection and proposes a new image quality evaluation method, namely saliency-map-based GMSD (SGMSD). The process is shown in Figure 3.

The specific steps are as follows: the algorithm first detects the saliency area of the input image and obtains the saliency map Vs(i). The algorithm then calculates the gradient model similarity map CSM(i) of the image and then introduces the saliency map to obtain the gradient similarity map SGSM(i) based on saliency map detection. Finally, the algorithm calculates its similarity deviation as the SGMSD image quality evaluation index. The process can be briefly described as follows:

Step 1 is to use the FT algorithm to calculate the image saliency map Vs(i)

Step 2 is to calculate the gradient model similarity graph GSM (i) of the image [21]

Step 2.1. Sobel gradient operator

The horizontal and vertical Sobel operator $G_x\Delta G_y$ is

$$\begin{cases} G_x = \begin{bmatrix} -1 & 0 & 1 \\ 2 & 0 & 2 \\ -1 & 0 & 1 \end{bmatrix}, \\ G_y = G_x^T. \end{cases} \tag{4}$$

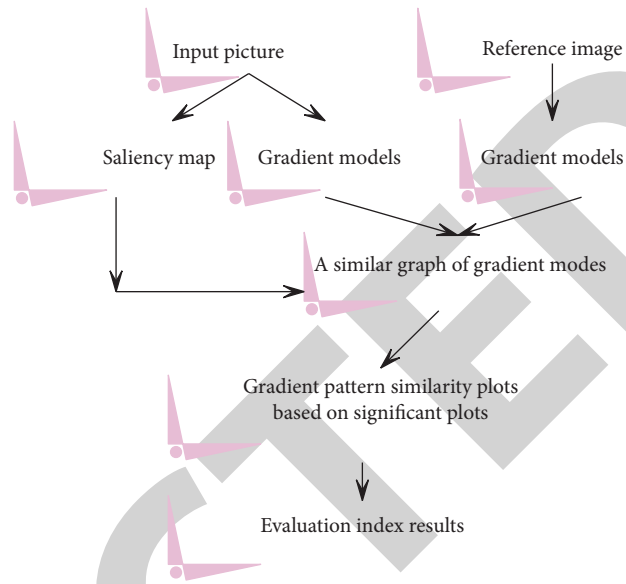

Figure 3: Flow chart of SGMSD.

Step 2.2. Gradient module similarity graph calculation According to formulas (4) and (5), the gradient modulus m_l and m_R of the input image I and the reference image R are calculated as follows:

$$m_l(i) = \sqrt{(I(i)\otimes G_x)^2 + (I(i)\otimes G_y)^2}, \tag{5}$$

$$m_R(i) = \sqrt{(R(i)\otimes G_x)^2 + (R(i)\otimes G_y)^2}. \tag{6}$$

where $I(i)$ and $R(i)$ represent the image area centered on i.

Next, the algorithm calculates the gradient modulus similarity graph GSM (i) as follows:

$$GSM(i) = \frac{2m_l(i)m_R(i) + c}{m_l^2(i) + m_R^2(i) + c}. \tag{7}$$

where c is a very small normal number to prevent the denominator from being 0.

Step 3 is to calculate the gradient mode similarity map SCSM (L) based on the saliency map as follows:

$$\mathrm{SGSM}(i) = \mathrm{GSM}(i)\mathrm{Vs}(i). \tag{8}$$

Step 4 is to finally calculate the similarity deviation SGMSD of SGSM (i), which is the desired evaluation index [22], as follows:

$$M = \frac{1}{N}\sum_{j=1}^{N}\mathrm{SGSM}(i),$$
$$\mathrm{SGMSD} = \sqrt{\frac{1}{N}\sum_{j=1}^{N}(\mathrm{SGSM}(i) - M)}, \tag{9}$$

where the larger the value of SGMSD, the higher the similarity of the gradient.

The fast image SR convolutional neural network (FSRCNN) is a compact hourglass-shaped CNN structure. Compared with the earliest SRCNN, its SR reconstruction effect is better, and it can achieve real-time performance on a general-purpose CPU. At the same time, the sparse technology of the neural network model can optimize the performance of the neural network and improve the generalization ability of the model. Parameter pruning, low-rank decomposition, parameter quantification, and knowledge distillation are examples of sparse approaches. According to relevant research, the number of connections in the human brain structure network decreases with age, while brain learning capacity continues to improve. If the smaller connections in the neural network are removed and the connection density of the neural network is lowered, the network's reasoning and training processes may be accelerated, and the computing cost can be effectively reduced. To optimize the FSRCNN network, this research uses the model sparse approach of parameter pruning. Based on the network structure of FSRCNN, this paper proposes SRSCNN, which contains seven convolutional layers and one deconvolutional layer. The activation function of each convolutional layer selects the PReLU function, and the loss function uses Euclidean distance. The SRSCNN network structure is shown in Figure 4.

Common general image data sets include Set 5, Set 91, General-100, CIFAR-10, ImageNet, and so on. This article chooses Set91 and General-100 as the training set and Set 5 as the test set. In order to improve the generalization ability of the model, the sample is expanded by data augmentation: the images in the sample library are all rotated by 90°, 180°, and 270°. The HR image in the sample library is downsampled 3 times, and the obtained high- and low-resolution images are divided into blocks. The size of each image block is 7×7 [23].

The training process of SRSCNN is analogous to traditional neural network training methods, including four stages: forward propagation, loss calculation, backward propagation, and weight update.

The algorithm initializes the weight W and bias b of the convolution kernel; then the forward propagation process can be expressed as follows:

$$\begin{cases} x^t = f\left(u^t\right), \\ u^t = W^t x^{t-1} + b^t. \end{cases} \tag{10}$$

where f is a nonlinear activation function, used to solve linear inseparable problems and improve neural network classification ability.

After forward propagation, the loss function L is calculated from the output, and the weight and bias are updated by the gradient descent method:

$$\begin{cases} W \leftarrow W - \eta \dfrac{\partial L}{\partial W}, \\ b \leftarrow b - \eta \dfrac{\partial L}{\partial b}. \end{cases} \tag{11}$$

The specific steps of SRSCNN sparseness are as follows: the algorithm assumes that there are four neurons in the t-th layer and sorts the weights according to the current layer weight W, discarding some of the connections with smaller weights and retaining the connections with larger weights. After that, the algorithm sequentially selects the weights of the six hidden layers in the middle to achieve the purpose of a sparse network. The sparsely connected neural network can reduce the number of parameters and reduce the computational complexity.

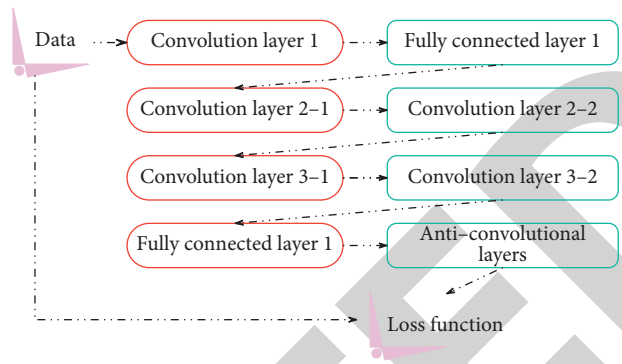

Figure 4: SRSCNN network structure.

4. Teaching Chinese as a Foreign Language System Based on Information Technology

After a lot of investigation and research in the early stage, it can be determined that the Chinese learning system has development conditions. The feasibility of the system will be demonstrated from four aspects: technical feasibility, operational feasibility, economic feasibility, and value feasibility. (1) Technical feasibility. Technical feasibility is usually considered in terms of hardware and software. In terms of hardware, the Chinese learning system only needs a computer for system development and a server with moderate performance for deployment services. The hardware requirements are very simple. From the perspective of software, the software development platform and technology needed for system development are quite mature. In addition, the natural language processing technology that needs to be used in the system development process has been relatively mature. In particular, technologies such as Chinese word segmentation and labeling and automatic summarization can already be used in the development of the system, greatly increasing the technical feasibility of the system. In general, the technical conditions for system development are fully available. (2) Operational feasibility. The system is developed based on the Web. After the system is developed, it is deployed on the server. Any computer that can access the web page normally can access the system through the server's IP address. In addition, the system has fully considered the needs of use and maintenance during development, with a friendly interface, easy operation, complete functions, and good maintainability. Therefore, the project is feasible in terms of operational feasibility. (3) Economic feasibility. In the system development process, the required hardware facilities are a computer, the required software tools can be obtained for free, and there is a certain human

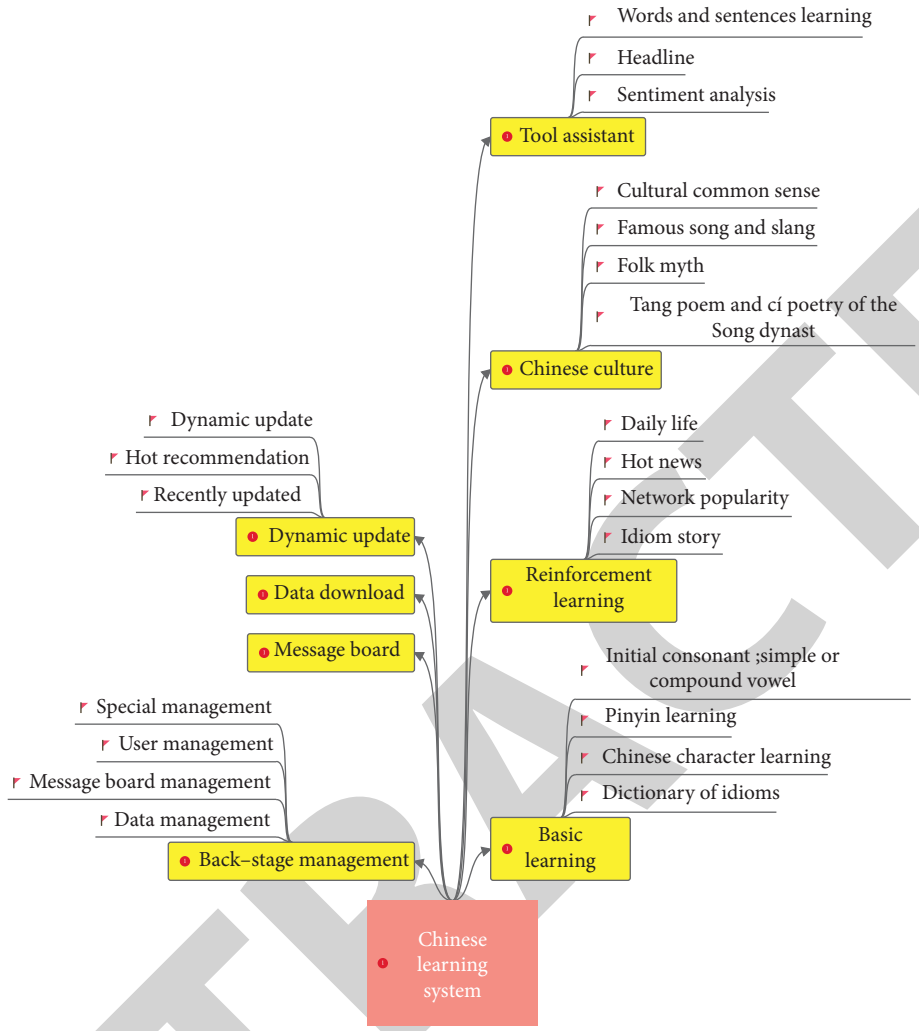

Figure 5: System overall design framework diagram.

resource cost. After the development of the system is completed, a server with moderate performance is needed to deploy the system and respond to user access requests. In general, the economic cost of the entire project is relatively low. After the system is put into operation, it will play a huge role in improving the Chinese learning mode and increasing the learning efficiency of users, and basically, no new costs will be incurred, and the economic benefits are obvious. Therefore, the project is feasible in terms of economic feasibility. (4) Value feasibility. With the development of informatization and the demand for Chinese, the development of a Chinese learning system combined with natural language processing technology is of great significance to the spread of Chinese.

When designing the overall framework of the system, a layered and modular design method was adopted to make the logical structure of the whole system reasonable and the process clear, which laid a good foundation for the realization of the system. After completing the system functional and nonfunctional requirements analysis, the system is now divided into eight modules: dynamic update, basic learning, reinforcement learning, Chinese culture, tool assistant, resource download, message board, and background management. Among them, when the implementation of each module is described later, since the implementation principles of the two modules of reinforcement learning and Chinese culture are basically the same, they are collectively referred to as topic browsing. The overall design framework of the Chinese learning system is shown in Figure 5.

Database design can usually be divided into six stages: requirements analysis, conceptual design, logical design, physical design, database implementation, and database operation and maintenance, as shown in Figure 6.

Stage of requirement analysis: It is required to define the pertinent state of the system data flow; analyze it primarily based on the kind, amount, and use of the data; and clarify different limitations. This is the foundational work for database design. Stage of conceptual design: A design idea must be adopted from local to global; user demands must be summarized and abstracted; and a full and independent data conceptual model must be formed. The conceptual data model must be transformed into a logical model, which must generally comply with a certain database management system. Physical design stage: This stage requires

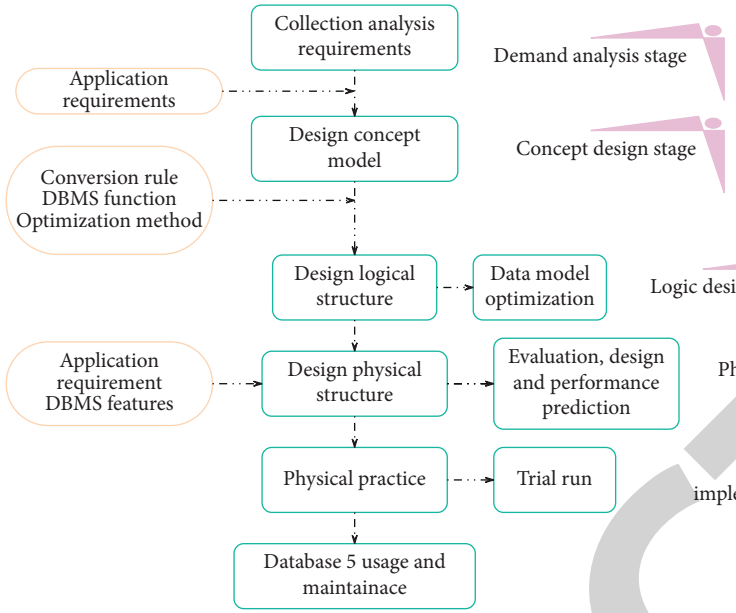

Figure 6: Flow chart of database design.

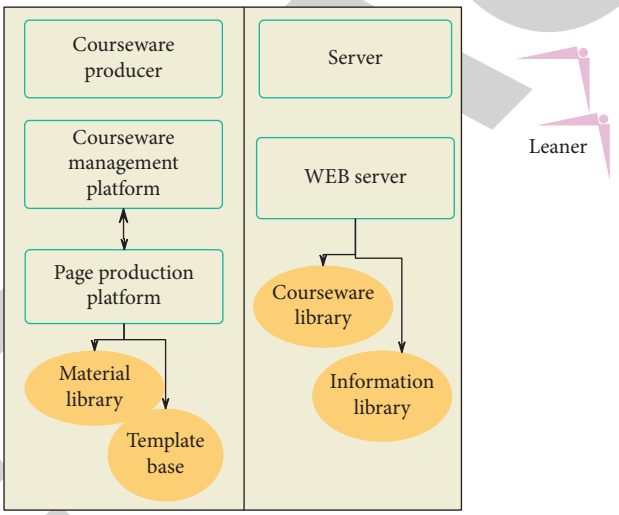

Figure 7: The processing system of Chinese as a foreign language media courseware resource material.

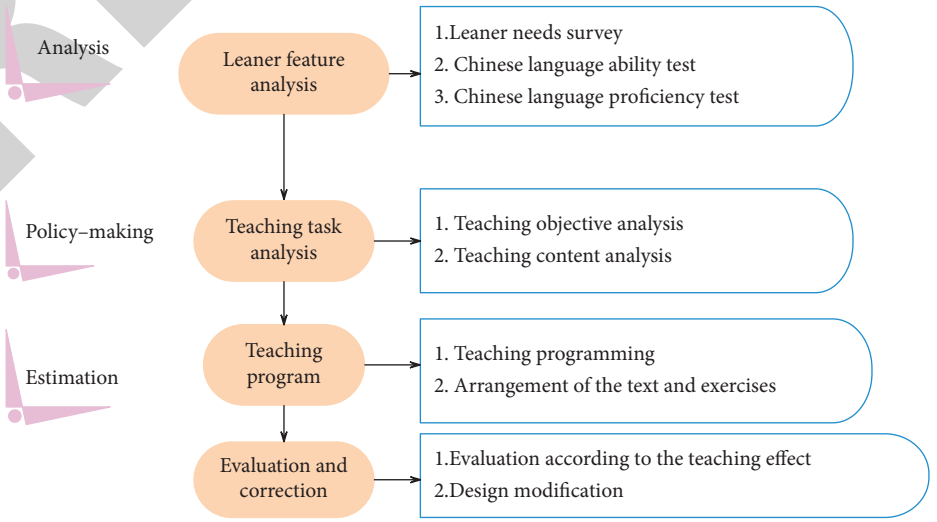

Figure 8: Model of Chinese multimedia teaching material package.

Figure 9: The process of grammatical image feature extraction of Chinese as a foreign language: (a) original image, (b) pretreatment, (c) preliminary feature extraction, (d) background elimination, and (e) feature extraction results.

determining database entity properties, data kinds, accuracy, and making trade-offs between user demands and a variety of factors such as system efficiency and cost, as well as selecting the optimum database physical structure. Following the selection of a good database physical structure, it is important to create a database, gather different relevant data, and assess the database design's rationale. Stage of database operation and maintenance: the database must be altered and modified as user requirements change. When it comes to database design, the quality of the data structure has an impact on both the efficiency of operation execution and the efficiency of data gathering. As a result, maintaining

Table 1: Image semantic extraction effect of teaching Chinese as a foreign language system.

No.	Semantic extraction	No.	Semantic extraction	No.	Semantic extraction
1	93.76	14	89.49	27	87.27
2	92.44	15	88.69	28	86.94
3	93.09	16	88.16	29	92.06
4	93.45	17	89.08	30	89.20
5	86.48	18	91.45	31	96.88
6	87.91	19	86.91	32	94.80
7	95.94	20	93.33	33	92.34
8	96.49	21	87.70	34	90.13
9	93.21	22	93.83	35	88.47
10	91.42	23	86.55	36	87.11
11	87.89	24	93.69	37	91.69
12	90.91	25	95.24	38	95.90
13	91.43	26	89.39	39	90.19

a solid database architecture is critical to increasing efficiency.

This system is suitable for online teaching of Chinese as a foreign language, and it should be oriented to the teaching of the campus network and local area network. The reviewed courseware is also suitable for remote teaching. This system can be used as a supplementary tool for classroom teaching. That is the teacher's electronic teaching plan. At the same time, it can also be used as a supplementary tool for students to study Chinese after class.

Through the teaching Chinese as a foreign language material library system integration, teachers can select suitable teaching templates in the template library according to their needs. Moreover, new courseware is compiled through the production module and stored in the courseware library. The underlying structure of the system is shown in Figure 7.

Video teaching can build a virtual cultural environment for students, and it has a great role in promoting language teaching and the spread of Chinese culture. Through the four aspects of learner characteristics, teaching tasks, teaching procedures, and teaching evaluation, a dynamic, balanced, and sustainable development model is constructed (Figure 8).

The semantics of the grammar picture of teaching Chinese as a foreign language system are extracted using information technology in this article. As a result, the next stage is to apply subanalysis to the grammatical picture of teaching Chinese as a foreign language. Figure 9 shows the outcome of image processing using the approach described in this study.

On the basis of the above research, the performance of this system is verified. Starting from the actual situation, the semantic extraction and teaching effect of this system are evaluated, and the results shown in Tables 1 and 2 are obtained.

From the above research, we can see that teaching Chinese as a foreign language system based on information technology proposed in this paper has a good teaching effect and can effectively promote the reform of teaching Chinese as a foreign language.

Table 2: Teaching effect of teaching Chinese as a foreign language system.

No.	Teaching effect	No.	Teaching effect	No.	Teaching effect
1	91.15	14	94.13	27	80.83
2	90.21	15	90.94	28	89.04
3	86.80	16	91.12	29	94.82
4	91.18	17	95.00	30	88.93
5	91.36	18	80.75	31	80.06
6	86.16	19	81.30	32	93.47
7	87.06	20	80.89	33	88.47
8	89.16	21	86.29	34	91.30
9	91.32	22	83.23	35	82.23
10	80.92	23	94.48	36	83.60
11	93.46	24	80.44	37	94.40
12	94.28	25	91.64	38	85.62
13	85.39	26	90.50	39	90.32

5. Conclusion

The grammatical method for teaching Chinese as a foreign language has steadily become one of the academic circles' main concerns. The conventional teaching of Chinese as a foreign language model has been unable to satisfy the demands of the times due to the continual development of new language theories and teaching conceptions, particularly the strengthening of research on Chinese ontology and teaching Chinese as a foreign language. This article combines intelligent information technology with foreign Chinese teaching grammar to create a teaching system that disrupts the typical teaching of Chinese as a foreign language scenario. Furthermore, this work uses information technology to increase the resource convenience and reliability of teaching Chinese as a foreign language by using picture semantic recognition. The findings of the experimental investigation suggest that the information technology-based teaching of Chinese as a foreign language system presented in this work has a good teaching impact and may effectively advance the reform of teaching Chinese as a foreign language.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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