

Research and Economic Analysis of Education Information System Based on Intelligent Economic Product Research and Development -Model Design and Economic Benefit Analysis of Teaching Information System in Colleges and Universities Based on Artificial Intelligence Course, Hunan Medical University As An Example

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Abstract: We have designed the computer system of teaching science popularization for physical network, virtual reality technology, augmented reality technology, artificial neural network and other models, with the purpose of improving the learning quality and learning situation of students targeted by teaching. At the same time, we have tried to put forward the strategy of global e-commerce network for various computer teaching models, with the purpose of solving the communication problem of language conversion through computer intelligence technology. At the same time, the research team discussed various kinds of colleges and universities. During the discussion, the research team put forward the modeling strategy of computer teaching system for students of different majors, and we conducted economic benefit analysis. The research team analyzed the model design, data analysis, data processing and discussion results, and conducted global communication, which is reported in this article.

Key words: intelligent economic product research and development Education Computer science Engineering science Artificial intelligence information system Teaching system

1 Background

AI is an auxiliary tool. Its mission is not to replace teachers, but to free up more time and energy for teachers, innovate educational content, reform teaching methods, and make education better.

The research team believes that in the field of education, AI is still at a very early stage. Structured data such as student status is still getting through, and unstructured data, such as data collection based on student behavior, has just started. Only a large enough sample size can support AI optimization.

However, the educators of the research team firmly believe that the traditional education

method is still irreplaceable. In Zhao Honghua's opinion, the emotional interaction between teachers and students involved in face-to-face teaching is not available in micro classes and online Q&A. Teachers sometimes get feedback by observing students' expressions, and students also get emotional support from teachers' praise or criticism.

The research team believes that in personalized teaching, the research team needs to analyze the data by taking the student behavior data to the database, and call different analysis tools and models to analyze the data according to the data, so as to provide students with different contents and learning strategies to guide their personalized learning.

Therefore, the research team believes that AI teaching should be carried out in all industries. [1-5]

AI will promote the rapid updating of educational resources and make them more portable. Traditional education mostly depends on paper books, which have several major shortcomings: difficult to update, very heavy, and difficult to preserve. Once updated, the original books are equivalent to obsolescence. If the artificial intelligence education method is used, the update only takes a moment. After the server is uploaded, users can obtain the latest version as long as they update the data online. Students do not have to carry heavy schoolbags any more. In the current global latest research, the number of medical IoT and its related interdisciplinary scientific research achievements retrieved by was is increasing. At the same time, the current global latest research on intelligent teaching is trying to introduce AI technology into relevant research. Such research is the trend of the times. The number of AI research projects in China is also rising. In the future, robots may even replace students with learning materials. This kind of light and timely education method has much less trouble than traditional education. The research team designed and reported the relevant strategies based on the functional characteristics of AI technology, and the research team reported and analyzed the experimental data. [6-10]

2 Designing method of research

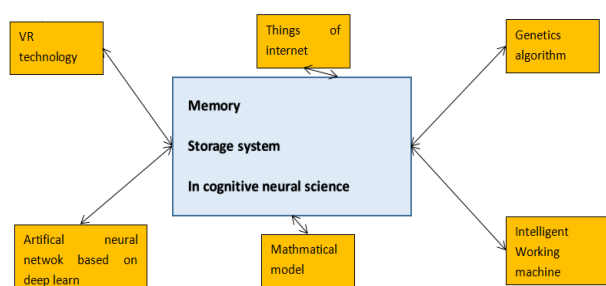


Figure1 A intelligent teaching model strategy based on neural psychology

As shown in Figure 1, in the macro AI related teaching model, we have summarized and analyzed VR technology, Internet of Things technology, computational neuroscience and mathematical modeling technology as a whole. And as the teaching content. The research team

believes that the interdisciplinary correlation shown in Figure 1, such as computational genome technology, also needs to be designed for relevant needs.

2.1 Education environment

The integration of physical space and virtual space is realized by using computing technology. With artificial intelligence technology as the intelligent engine, build the intelligent perception ability and service ability to support a variety of learning needs.

2.2 Learning process

With the support of various AI technologies, cognitive models, knowledge models and situational models are constructed, and on this basis, the learning process of intelligent support for various scenarios is provided, so as to achieve the process of communication, integration, reconstruction, collaboration, exploration and sharing of learners and learning services.

2.3 Education evaluation

It plays an important evaluation role in the generation of test questions, automatic marking, learning, problem diagnosis, etc. It can also diagnose and feed back the knowledge, physical and mental state of learners in the process of learning, which plays an irreplaceable role in the evaluation of students' comprehensive quality, including intelligent evaluation, detection and early warning of students' problem solving, mental health, physical health inspection and developmental evaluation, student growth and development planning, etc.

2.4 Teacher's assistant

Replacing teachers' repetitive, monotonous and unchanging work in their daily work can also improve teachers' other work abilities, enabling them to handle complex affairs that they cannot handle before.

It will also provide students with personalized and accurate support that cannot be provided before, greatly improving the efficiency of knowledge transfer. In this way, teachers can devote more time and energy to the overall physical and mental development of each student.

2.5 Management and service:

Through the collection and analysis of big data, establish an intelligent management method to form a human-computer cooperation model for decision-making, so as to gain insight into the nature and development trend of the problem, which can effectively improve the quality of education and promote education equity.

The above five strategies are proposed for the research team. The purpose is to comprehensively promote AI technology at the macro social level, propose strategies and try to solve educational problems.

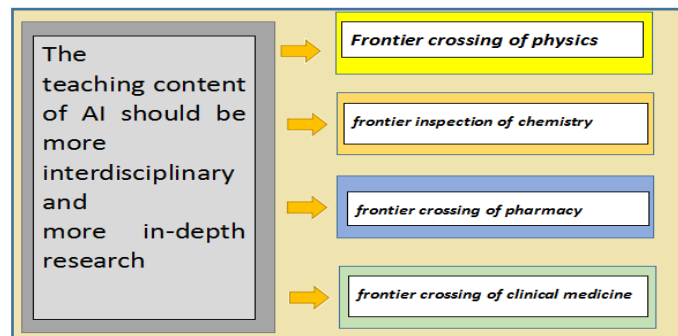


Figure2 An intelligent teaching model for different area

As shown in Figure 2, we propose to teach AI technology in physics, biology, chemistry, health medicine and other disciplines, with the aim of improving the learning ability of students in current global colleges and universities, and at the same time completing the cultivation of original scientific research and innovation thinking. It can solve the problem that interdisciplinary research is difficult to develop due to insufficient knowledge.

We take computational chemistry as an example. Computational chemistry uses the theoretical model of quantum chemistry and effective mathematical approximate calculation methods to calculate the properties of molecules through computer programs, such as total energy, dipole moment, quadrupole moment, vibration frequency, reaction activity, molecular structure, etc., and to explain some specific chemical problems. For example, Deepmind Company, which once developed the Alpha Dog Go program, has developed a program to calculate the protein folding model, which will be of great significance in biochemical research and drug development. It can help to determine the active structure of biological active ingredients and greatly improve the synthesis efficiency of drugs. At the same time, the research team believes that it is very important to popularize relevant AI technologies to all disciplines before teaching.

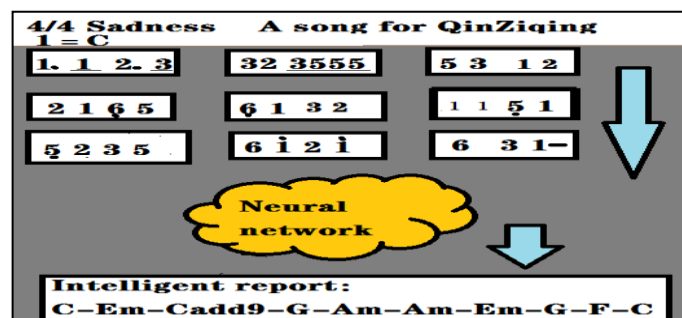


Figure3 A neural network model based on musci and art

As shown in Figure 3, we try to integrate the teaching strategy of matching chord and immortal couple by artificial neural network into the music professional content.

We split the first level chord of C natural major into 1,3,5 three chord internal tones. After

artificial neural network calculation, it can be used as a fuzzy algorithm and expert control system to automatically generate four four beat chords composed of melody.

In the figure, we have shown the result of chord generation based on the principle of chord internal cause in downbeat in musicology. We just put forward such a strategy. Therefore, the combination of AI and music is very powerful for students of conservatory of music to create songs and arrange songs.

The research team's research and development strategy is as follows: based on the extraction of melody, rhythm and other information from tens of thousands of original audio files, the carefully designed LSTM cyclic neural network architecture is used to generate note sequences, and finally the knowledge base in the music field is used to synthesize various types of music. Users only need to issue song type instructions to music AI intelligent hardware to quickly generate creative tracks of different styles, which is no longer the inherent right of professional musicians, so that people interested in music can also create their own songs through music AI. The integration of music and artificial intelligence technology not only has a certain impact on the existing music industry, but also has broken the fixed mode of music creation by composers, driving the rapid development of the entire music industry.

The production of intelligent musical instruments overturns the inherent product model. Based on the core technology of artificial intelligence chips, the integration of music+AI has a great impact and impact on the production of traditional musical instruments. Musical instrument suppliers only need to combine music AI technology to change the production model of traditional musical instruments, combine the two according to market customer needs, and finally use music+AI to promote the innovation of the development model of the entire musical instrument industry.

As shown in Figure 4, this is a UAV robot controlled by the Internet of Things that we designed to assist emergency medicine. The fog computing model has not been designed yet. At present, we only introduce the basic mechanical primary model and the use strategy of information path.

A: UAV power unit

B: Signal receiver and feedback device

C: Fixed body

E: Ground monitor

F: Puncture robot

G: Directional lever

I: Fixed equipment

H: First aid kit

We believe that this device can assist emergency medical staff in rescuing patients, and it can also be used as a new type of intelligent device to fill the relevant gaps. However, we found in the survey that the current medical colleges and higher medical research institutes did not carry out the teaching of cross disciplinary students.

Therefore, it is necessary to fill this gap and propose this strategy.

The research team hopes that students can design medical engineering devices by themselves, which is often more consistent with clinical requirements than those designed by students of single engineering science.

The development of AI will not replace doctors. Although AI medical surgical robots have been successfully produced and developed in large quantities and invested in various operations, they cannot replace doctors. Medical robots basically depend on doctors. In addition, medical robots cannot achieve independent innovation. If there is no doctor, medicine will stop.

But if there is no robot doctor, patients cannot be fully served. To help each other and promote each other to enhance students' awareness of learning artificial intelligence and modeling ideas.

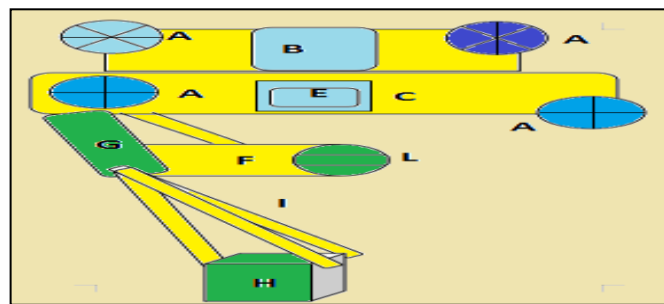


Figure4 A model based on things of internet based on medical robot

As shown in Figure 5, the research team believes that the most important teaching method may be to use streaming media technology for teaching. The so-called streaming media technology is a network transmission technology that puts continuous video and audio information on the website server after compression, so that users can watch and listen while downloading, instead of waiting for the entire compressed file to be downloaded to their own computers. This technology first creates a buffer on the user's computer, and uses the next segment of data as a buffer before playing. When the actual connection speed of the network is less than the speed used for playing, the player will take a small segment of data in the buffer, which can avoid the interruption of playing and ensure the playing quality.

For streaming media transmission on the network, the transmitted files must be made into streaming media format files suitable for streaming media transmission. Streaming Media Technology

Because the capacity of multimedia files stored in this format is very large, it takes a long time to upload and transmit on the existing narrowband network. If the network is busy, the transmission will be interrupted. In addition, streaming media in normal formats cannot be transmitted according to the streaming media transmission protocol. Therefore, the files that need to be transmitted in streaming media format should be preprocessed and compressed to generate streaming media format files. Two points should be noted here: First, select an appropriate compression algorithm for compression, so that the generated file size is small.

Second, you need to add streaming information to the file. However, streaming media refers to a working mode in which users play multimedia data while downloading through the network or a specific digital channel. One of the biggest advantages of streaming media applications is that users do not need to spend a long time downloading all the multimedia data to the local area before playing. Instead, they only need to download the data in the first few seconds to the local buffer to start playing. The data received later will be continuously input to the buffer to maintain the continuity of playing. Therefore, streaming media players usually only have some time delays at the beginning. Streaming media system is much more complex than downloading and playing system, so it is necessary to combine multimedia codec and transmission technology well to ensure that users can obtain stable playing quality in complex network environment. Therefore, it is very important to create a streaming media platform that meets the needs of Figures 1 to 4, which allows students to learn relevant knowledge at home.

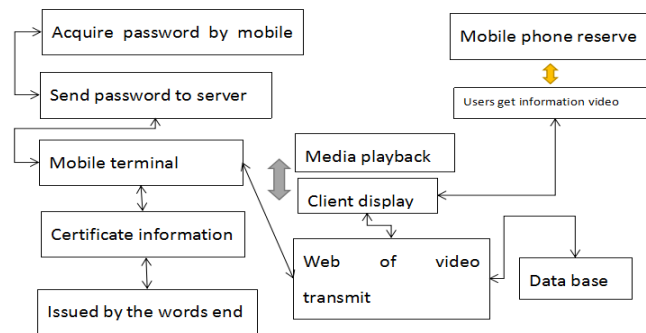


Figure5 A necessary model based on biology and medicine based on computer technology about streaming media

Streaming media refers to the media form that transmits audio, video and multimedia files in the network by streaming. Compared with the network playing form of watching after downloading, the typical feature of streaming media is to compress the continuous audio and video information and put it on the network server, so that users can watch while downloading without waiting for the entire file to be downloaded. Due to the advantages of streaming media technology, it is widely used in video on demand, video conference, distance education, telemedicine and online live broadcast systems. Live streaming mainly transfers video files to the client by streaming protocols (RTP/RTSP, MMS, RTMP, etc.) for users to watch online; It can also receive real-time video streams from video capture and compression software, and then broadcast them to the client with streaming protocol.

Therefore, it is very important to integrate medical knowledge into the necessary computer architecture to form a surgical live streaming system. Therefore, the research team believes that necessary medical databases should be included to provide services and create complete streaming media

3 Experiment and data analysis:

Design experiment:

Objective: To understand the current situation of neuroscience teaching in China and Belarus, and to understand whether there are relevant teaching models and students' level.

PARTICIPANTS: Master and undergraduate students of Sakharov International National Institute of Ecology of the Republic of Belarus, clinical medical expert students of Belarusian National Medical University.

And interns of the Second Affiliated Hospital of Chifeng University of China.

Test method: questionnaire survey; The questionnaire is as follows:

1. Have you learned about intelligent medicine?
2. Have you studied mathematical modeling and neuroscience?
3. Have you learned about educational informatics equipment supported by neuropsychology?
4. Have you learned mathematical modeling knowledge in computer engineering technology under the guidance of neuroscience?
5. Have you studied intelligent physical therapy and chemotherapy?
6. Have you studied digital economics and cryptocurrency?
7. Have you learned any knowledge related to music and mathematical modeling?
8. Have you learned the knowledge related to neuroscience data model and information system?
9. Have you ever learned strategies related to digital economy and health management?
10. Have you studied biomedical engineering and computational neural networks?

A is very clear, B is very clear, C is not very clear, D knows a little Number of participants: 100

Data analysis: As shown in the figure, we found in A-D that the penetration rate of relevant technologies in developing countries around the world is very low, and the degree of learning and mastering some relevant knowledge is very low.

Therefore, it is very important to promote the existing teaching models, propose our strategies, complete the tasks of social education science, solve the popularization and teaching of the application of artificial intelligence technology, and reduce the gap between applied mathematics and computing technology among the world's major scientific and technological countries. It is also necessary to design our teaching platform.



Figure 6 Data-analysis

4 Conclusion

Conclusion: The model designed by the research team provides research strategies and teaching points in the intersection zone related to various disciplines and artificial intelligence, which can assist teaching institutions and students in learning. Therefore, the research team believes that the implementation of the above technologies in Eastern Europe and China is necessary and feasible, and we think it is beneficial to them. It is worth popularizing and transforming achievements.

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