Researching for Teaching Method of Big Data Curriculum Group

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Abstract: artificial intelligence, as the most popular technology in the field of science and technology, has attracted the attention of many people inside and outside the industry. Artificial intelligence has been paid more and more attention in the field of computer, and applied in robot, economic and political decision making, control system, simulation system. Based on the training of applied ability, this paper discusses the teaching contents and teaching methods of big data curriculum group.

1. Introduction
Artificial intelligence is a discipline that studies the use of computers to simulate certain thinking processes and intelligent behaviors of people (such as learning, reasoning, thinking, planning, etc.). It mainly includes the principle of computer realization intelligence, the manufacture of computers similar to human brain intelligence, so that computers can achieve higher-level applications. The industrial chain of artificial intelligence includes three parts: AI technology, underlying hardware (AI chip, visual sensor), application field (smart home, intelligent hardware, robot, autopilot, industry application), etc. At present, AI technology includes five parts: big data, computer vision, speech recognition, natural language processing and machine learning.

Big data is a large data group collected in multiple forms and from many sources. The ability to quickly obtain valuable information from various types of data is big data technology. Big data is the basis of AI intelligence, degree upgrading and evolution, with big data, AI can continue to conduct simulation exercises, constantly close to the real artificial intelligence.

The curriculum group is an organic whole composed of several similar courses with close bearing, mutual penetration and strong complementarity in content, and organizes the curriculum construction according to the curriculum framework to obtain the overall optimization of the curriculum system.

2. Teaching content
The big data course group integrates the courses of data acquisition, analysis, processing software, mathematical modeling software and computer programming language. Taking "attaching importance to basic theory, highlighting concrete application and strengthening engineering practice" as the main line, a comprehensive teaching system of curriculum group is established. As the direction of talent training, big data is still in the process of exploration, and the undergraduate stage is more inclined to the comprehensive coverage teaching of big data related basic knowledge. Big data has different curriculum groups at different stages.

The basic stage: Linux, Docker, MySQL foundation, Oracle foundation, MongoDB, redis, hadoop mapreduce, HDFS working principle, the YARN introduction and the component introduction.
Big data storage phase: hbase, hive, sqoop.
Large data architecture design phase: Flume distributed, Zookeeper, Kafka.
Big data real-time computing phase: Mahout, Spark, storm.
Big data acquisition phase: Python, Scala.
Compulsory courses for the major are shown in Table 1.

Table 1. Compulsory courses for major

| term | course name                        | credit | assessment method | total periods | experimental hours | practical hours (week) |
|------|------------------------------------|--------|-------------------|---------------|-------------------|------------------------|
| 1    | Fundamentals of Java program development | 3      | exam              | 48            | 24                | 0                      |
|      | Introduction to Big Data           | 3      | exam              | 48            | 24                | 0                      |
| 2    | Database fundamentals and applications | 3      | exam              | 48            | 24                | 0                      |
|      | CF ColdFusion of Big Data          | 2      | test              | 32            | 0                 | 2                      |
|      | Fundamentals of Hadoop program development | 3      | exam              | 48            | 24                | 0                      |
|      | Fundamentals of Linux operating system | 3      | exam              | 48            | 24                | 0                      |
|      | Fundamentals of NoSQL program development | 3      | exam              | 48            | 24                | 0                      |
|      | Hadoop integrated training         | 2      | test              | 32            | 0                 | 2                      |
|      | Data cleaning                      | 3      | exam              | 48            | 24                | 0                      |
|      | Cloud Computing and Virtualization | 3      | exam              | 48            | 24                | 0                      |
|      | Data Warehouse and Data Mining     | 3      | exam              | 48            | 24                | 0                      |
|      | Spark integrated training          | 2      | test              | 32            | 0                 | 2                      |
|      | Big data visualization technology  | 3      | exam              | 48            | 24                | 0                      |
|      | Big data visualization integrated training | 2      | test              | 32            | 0                 | 2                      |
|      | software engineering               | 2      | test              | 32            | 16                | 0                      |
|      | off-campus internship 1            | 2      | test              | 32            | 0                 | 0                      |
|      | off-campus internship 2            | 4      | test              | 64            | 0                 | 0                      |
|      | graduation project                 | 2      | reply             | 32            | 0                 | 0                      |

3. Teaching methods

The concept of curriculum group design takes cultivating innovative spirit and engineering ability as the core and big data technology as the basis to cultivate students' professional ability, ideological ability and social ability.

Through the study of big data technology course, we can cultivate students' overall consciousness and improve their comprehensive quality in the project cooperation development. In the process of teaching, we not only teach students knowledge and operation, but also pay attention to making students master the methods of analyzing and solving problems, and develop good working habits and good professional accomplishment. We pay attention to the formation of learning team, encourage students to communicate with each other, interactive learning, so that students can build their own knowledge system. Each project has a task book and a teaching evaluation form, which can be studied in the classroom or in the laboratory.
3.1 Adhere to cooperation between schools and enterprises and strengthen practical teaching
In order to realize the goal of cultivating applied talents, we must start with paying attention to the cultivation of students' practical ability; design practical teaching links systematically, combine teaching practice, production practice, technical practice, social practice and scientific research practice into a complete system, and combine organically with theoretical teaching and permeate each other. Therefore, we should implement the open teaching mode, attach importance to the practical teaching links, and attach importance to the participation of social forces in the cultivation of students' practical ability.

3.1.1 Construction of a practical teaching system
It is necessary to thoroughly change the subordinate position of practical teaching under the traditional education mode, increase the proportion of basic skill courses and practical teaching courses in the whole curriculum system, and construct a reasonable practical ability system for students.

3.1.2 Strengthening cooperation between schools and enterprises
Enterprise is an important base for students' practical teaching and post practice, a window for schools to connect with society, and an important training base for the implementation of applied undergraduate talent training model. Although the school builds some laboratories with practical working scenes to carry out simulation teaching, this kind of simulated training scene has certain mechanical properties, which cannot completely reflect the changes of the real work site, and has certain limitations. It cannot completely replace the training base on the training of talent practice ability. Independent colleges should strengthen close contact and cooperation with enterprises, establish systematic training bases, and create good conditions and opportunities for students' practical training.

3.2 Project teaching
Using project teaching, comprehensive use of guidance, display, examples and other teaching, so that students can understand the reality, rational perception, feedback theory from the results. In the process of teaching, we should design the project carefully, through solving the practical problems encountered in the implementation of the project, analyze the relevant professional knowledge, and let the students solve the problem in the practice of the project, deepen the students' understanding of the knowledge, and improve the students' ability to solve the problem. It can stimulate students' interest in active exploration.

3.3 Modular case-oriented teaching
At present, there are many kinds of courses offered in colleges and universities. By integrating the curriculum system, modular teaching under the guidance of case studies is carried out to promote interdisciplinary learning, so that students can combine the scattered knowledge learned in the original complicated courses organically.

3.4 Open Innovation Experiment Teaching
The innovative experiment teaching is the instruction that the teacher carries on the innovation experiment to the relatively outstanding student in the student group. In open laboratory, students can develop independently or teachers can give difficult tasks. Loose environment, flexible teaching methods, to improve students' independent awareness, innovative ability has a greater role in promoting. At the same time, we should abandon the original practice of single knowledge indoctrination, take students as the center, pay attention to the cultivation of engineering ability, change the teaching method of disconnection between theory and practice, and adopt the participatory experiential teaching method with problem-oriented and practice as the core. Through case type, discussion type, project type teaching and extracurricular training in class, we constantly explore various teaching methods, actively guide students to improve their own hands-on ability, and truly
realize the integration of teaching and doing. It is also necessary to take the case project as the carrier to connect the knowledge points in series to form an organic system. With the deepening of learning, the application of new knowledge is gradually added to the system. In addition, we should also strengthen the proportion of operational practical teaching links; carry out the cultivation of professional quality in the process of practical teaching, so that students' operational skills, professional ability and professional quality can be repeatedly and fully exercised.

3.5 Application of multiple teaching methods
On the premise of following the general law of teaching, according to the difficulty and characteristics of the course, as far as possible, a variety of teaching methods are adopted to select the appropriate teaching methods according to the content. For example, using project-based teaching, multiple learning scenarios are arranged in the course, each of which contains specific theoretical knowledge and practical skills, through which students can master the knowledge and skills of artificial intelligence. At the same time, it can exercise students' professional literacy.

3.6 Application of modern teaching techniques
In order to ensure the teaching effect, this course group teaching is carried out continuously for many weeks. Open practice base, let students arrange the time and content of practice independently, improve students' interest and ability of active learning. By using modern educational technology and virtual reality technology, we should establish teaching environment such as virtual project, give full play to students' subjective initiative in teaching, and achieve real quality education and professional ability training. Establish a network teaching environment, including admiration courses, quality courses website, and students can learn independently online.

4. Main measures
To set up a research and development group on the teaching reform of computer courses with the participation of key computer teachers in the Institute of Artificial Intelligence to study and discuss the implementation methods of this project.

To actively encourage the participation of students in the development of teaching projects, and at the same time to pay attention to the discovery and cultivation of the backbone of students in the course of the implementation of the projects.

To continuously improve the development technology of teaching projects and organizes the active participation of students in the process of project implementation, so as to cultivate students' ability of innovation and teamwork.

5. Conclusions
The purpose of this project is to guide practice and provide reference and train of thought for big data talent training in Artificial Intelligence College. Therefore, this project will take the empirical analysis conclusion as the foundation, adopts the system theory, the education appraisal, the education economics and so on principle and the method, constructs the artificial intelligence college big data talented person training pattern theory system and the realization method.

In the process of project implementation, the method of comparative research is used to compare the big data talent training model of various undergraduate colleges in China, especially the big data curriculum teaching reform and teaching results of independent colleges, and the method of tracking research is used to track the research and experimental analysis of artificial intelligence colleges, and the research conclusions are constantly improved.

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