

Exploration of Practical Teaching of Economics Major in Chinese Universities Under the Background of Big Data

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Abstract: Big data is practical and forward-looking, which poses new challenges to the practical teaching of economic majors in Chinese universities. With the rise of big data platforms, Chinese universities have gradually attached importance to data analysis tools and require students to master practical skills such as data mining and economic forecasting. This paper focuses on the practical teaching of economic majors in Chinese universities under the background of big data and explores innovative teaching strategies from aspects such as data analysis software, industry big data platforms, and data visualization classrooms to help students establish scientific economic thinking and accurate market prediction capabilities, thereby promoting a comprehensive innovation in economic teaching.

Keywords: Big Data, Economics major in college, Practical Teaching.

1. Introduction

Big data technology, with its huge information capacity and data processing capabilities, is driving profound changes in all walks of life. Under the background of big data, information in the economic field is becoming increasingly transparent, and economic decision-making models are becoming increasingly intelligent, which subverts traditional economic theory research and also provides a new perspective for practical teaching. Based on this background, teachers actively introduce big data elements into the practical teaching of economic majors in colleges and universities to improve student's practical ability. At this stage, economic teaching is no longer limited to book theories but requires students to master data processing skills, thereby realizing the integration and innovation of economic knowledge and data analysis.

2. Using Data Analysis Software to Improve Students' Practical Operation Skills

In the practical teaching of economic majors in Chinese universities, introducing data analysis software can effectively improve students' practical ability. In the teaching process, teachers should directly incorporate data analysis software into the classroom and set a series of tasks to allow students to conduct in-depth analysis in real data scenarios. At the same time, teachers should pay attention to the gradual deepening of practical teaching, first explaining the basic operations, then requiring students to predict market trends based on economic data, and gradually guiding them to use advanced algorithms to analyze economic phenomena. In this process, teachers should emphasize the correlation analysis of multidimensional data and encourage students to extract valuable information from massive data.

For example, in the first stage of the class, teachers should clarify the basic functions of data analysis software and guide students to become familiar with the interface and common operations. In the preliminary tasks, teachers can design small-scale data sets and ask students to manually input and complete basic cleaning and classification to gradually

cultivate their data sensitivity. Subsequently, teachers will gradually expand the practice to the analysis of multi-dimensional economic data, add actual economic indicators such as the consumer confidence index and GDP growth rate to the course, and require students to set analysis models based on specific indicators. In class, teachers can set up an economic simulation project on "the changes faced by several companies in market competition" and require students to predict the performance of companies under different market conditions based on the provided quarterly economic data. In the analysis process, teachers should encourage students to use advanced algorithmic tools such as regression analysis and time series forecasting to accurately simulate market changes. In the data analysis phase, teachers need to emphasize the establishment of models, guide students to pay attention to the subtle differences between data and analyze the economic significance behind them. On this basis, teachers can set up simulated trading tasks in the course, requiring students to carry out simulated investment operations based on the model results and record and analyze the data support in the operations. In class, teachers should adjust data variables to test students' adaptability and improve their sensitivity to market trends in a constantly changing data environment. To strengthen the continuity of operations, teachers can set up regular feedback links, requiring students to explain their model prediction results, discuss the trends behind economic data, and adjust ideas based on gains and losses in the model, to organically combine theoretical analysis with practical operations. Throughout the teaching process, teachers need to guide students to focus on the deep mining of multidimensional data, extract core economic information from the data, and gradually improve their data judgment capabilities.

3. Introducing the Industry Big Data Platform to Build a Practical Bridge For "School-Enterprise Interaction"

The industry big data platform can connect school classrooms with corporate practices. In this process, teachers can obtain real industry data with the support of enterprises, allowing students to conduct data analysis in a real economic

context. Based on this, teachers can set corporate project tasks to allow students to directly participate in the processing of corporate data and cultivate their market sensitivity. At the same time, teachers can combine industry platform data to regularly organize student discussions, require them to provide analysis reports based on industry trends, and simulate the corporate project planning process. In addition, teachers can continuously update cases on the platform, dynamically follow up on economic phenomena, and promote students to have a deep understanding of industry changes.

For example, in economics classes, teachers introduce big data platforms of well-known companies to allow students to directly face real data in the industry. In this process, teachers can arrange for students to access the database provided by the company and select market transaction data over some time for preliminary understanding. At this point, the data selected by the teacher should involve product sales, customer preferences, market trends, etc. Subsequently, the teacher requires students to conduct a preliminary analysis of the data, explore the basic logical relationships of the data, and sort out the core data indicators. After the data preparation stage, the teacher can design a simulated enterprise project, set specific market scenarios, and propose clear task objectives. In the project tasks, teachers require students to provide industry analysis reports based on data, and the content of the reports should cover market segmentation, product positioning, potential customer mining, etc. At the same time, teachers should provide regular guidance based on students' reports to help them understand the economic logic behind the data. After each report is completed, teachers can arrange for students to present the results of the analysis in class and explain the basis for their predictions. At this time, teachers should obtain the latest data from the industry big data platform and update the classroom content at any time to enhance the dynamic nature of the class. At the same time, teachers can set up a comprehensive analysis of multiple economic variables to test students' ability to coordinate data. To deepen the classroom effect, teachers can also select market operation cases of real enterprises from the big data platform and let students simulate the operational decisions of enterprises. During the teaching process, teachers should adjust each case according to the current market environment, allowing students to develop appropriate strategies based on the industry data they have mastered. In the final stage of the class, teachers should encourage students to propose innovative solutions or improvement suggestions based on the dynamic updates of the data platform. After the teaching task is completed, teachers can design regular feedback sessions, requiring students to present project results in class, summarize their inspiration in data analysis, and exchange the impact of different data processing strategies on market forecasts.

4. Build a Data Visualization Classroom to Stimulate the Thinking Spark of "Economic Insight"

Data visualization refers to interpreting the relationship between data in an easy-to-understand way such as graphics and images, so that students can understand the data intuitively. When building a practical classroom, teachers can use visualization tools to present complex data sets in the form of charts, maps, etc., to help students intuitively understand the relationship between economic variables. At

the same time, teachers should carry out classroom tasks with real cases, requiring students to visualize economic data and present them again in graphical form to strengthen the economic logic behind the data. At this time, teachers need to gradually guide students to design visualization plans independently and explore the hidden laws of economic phenomena. At the same time, teachers can set up dynamic interactive sessions in each class, conduct group discussions based on real-time updated data, and enhance students' intuitive feelings about the economic situation.

For example, at the beginning of the course, teachers should first introduce macroeconomic data into the classroom, and use data visualization tools to make key indicators such as GDP, inflation rate, and unemployment rate into line graphs and bar graphs to show their trends over time. After presenting the data, teachers can ask students to observe the data trends, discuss the changing patterns of various economic indicators, and guide them to initially form an understanding of the economic cycle. On this basis, teachers can provide detailed economic data sets that cover multiple dimensions such as consumer spending, import and export data, and money supply, and require students to use data visualization tools to generate corresponding heat maps and pie charts. In class, teachers should emphasize the logic of data charts, encourage students to try different ways of presenting data and explore the inherent connections between economic variables. Subsequently, the teacher asked the students to design a complete visualization report based on the multi-dimensional analysis of the data set and to express the economic phenomena behind the data with graphics. In addition, the teacher needs to gradually guide the students to master advanced visualization techniques and require them to analyze the deep laws behind the data in actual economic cases. For a set of regional economic data, the teacher should guide the students to build a map heat map to show the intensity of economic activities in different regions and strengthen students' understanding of economic spatial distribution. In this process, teachers can constantly set questions to stimulate students' thinking and let them discover hidden economic signals from charts. In addition, teachers can also set up dynamic data demonstration sessions and use real-time data update tools to let students discuss the changing trajectory of economic phenomena in the context of real-time data changes. At the same time, teachers can randomly select students and ask them to explain the potential impact of the latest data changes on the economic market.

5. Simulate the Real Market Environment and Deepen the Teaching Experience of "Data Decision-Making"

Based on big data content, in economics classes, teachers can build a market environment close to reality to provide an intuitive experience for data decision-making. In this process, teachers should use the market simulation system to carry out classroom tasks, and set up multiple economic roles and market variables, allowing students to play the roles of corporate managers, investment decision-makers, etc., and make business judgments based on real-time data. Not only that, teachers should cover market supply and demand fluctuations, price changes, policy regulation, and other content in the classroom, and require students to formulate corresponding strategies based on data changes. In the

classroom, teachers can set up a competition mechanism, divide students into groups, let them compete in the virtual market, and encourage students to analyze data and adjust strategies, so that data decisions have more practical depth.

For example, at the beginning of the course, teachers should first arrange for students to enter the simulated market platform and let each student assume different economic roles such as corporate manager and investment consultant. Later, teachers can divide the class into several stages, set up different market scenarios such as "demand surge" and "economic recession", and require students to respond quickly based on dynamic data. After each market stage, teachers need to retrieve the data report of the simulation platform, analyze the logic behind students' decisions in detail, and put forward suggestions for improvement. In the middle of the course, teachers need to introduce market variables such as policy adjustments, exchange rate fluctuations, and changes in the industrial chain, so that students can develop response strategies in an environment where multiple variables are intertwined. At this time, teachers need to use real-time data to adjust the economic environment and test students' judgment abilities. At the same time, teachers also set up factors such as supply and demand changes and price fluctuations in the simulated market, allowing students to adjust their economic strategies based on these changes, re-plan resource allocation, and strive to gain market advantages in competition. To enhance the competitiveness of the classroom, teachers can set up a market competition mechanism and encourage students to challenge other roles in the market game based on the rules set by the simulation system, thereby simulating competition between real companies. In the classroom, teachers can use rankings to display each student's market performance and analyze the pros and cons of their strategies, so that students can fully understand the importance of data-based decision-making. In the process of simulation competition, teachers need to constantly introduce new market events such as "competitors adjust prices" and "release policy dividends", and require students to respond quickly to consolidate their data analysis

and decision-making capabilities. In addition, teachers can use the system to trace back the entire market operation process, compare the economic decisions at each stage, and guide students to summarize the logical chain from data interpretation to strategy formulation.

6. Conclusion

In summary, the wave of big data is profoundly affecting the practical teaching of economic majors in Chinese universities. Practical classes are no longer limited to the imparting of theoretical knowledge, but integrate real data into the teaching process, allowing students to understand market logic in dynamic data. Teachers can gradually improve students' data processing capabilities and economic thinking by combining multidimensional data analysis, market simulation scenarios and data visualization tools. At the same time, economic major teaching presents an intelligent development trend, and practical classes have become a real field for training data decision-making and economic judgment. Based on this, the data-driven practical teaching model of economic majors in universities can scientifically shape future economic talents and enable them to cope with complex and changing market environments.

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