

## The Thought of Teaching Reform on Statistics Curriculum in Management Specialty

Bin Cui<sup>1, a\*</sup>, Yi Tian<sup>1, b</sup> and Jun Ke<sup>1, c</sup>

<sup>1</sup> Business College of Yangzhou University, Yangzhou, Jiangsu Province, China

<sup>a</sup> email, xjcuibin@126.com, <sup>b</sup> email, Jstianyi@163.com, <sup>c</sup> email, ke.jun@foxmail.com

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**Abstract.** According to the statistical management professional course teaching development trend both at home and abroad, constructs the management professional statistical course "classroom teaching, experiment teaching, statistical survey practice" the trinity teaching mode. By optimizing the teaching content, strengthen the experiment teaching, reformed the existing teaching mode and strengthen the practice teaching link, strengthening students' application of theories and methods of statistical analysis, the solution actual problem ability.

### Introduction

Statistics is a methodology science about data collection, collation and analysis, and has the characteristics of strong applicability. As one of the main basic courses of management major, this course is not only the precursors of multiple regression analysis, theory and method of social investigation and other courses in the curriculum system of management major, moreover, it has important practical value for students to carry out scientific research training programs. Therefore, management statistics course should not only emphasize the teaching of basic theory, the more important is to provide methods, thoughts and practical guidance for students to use basic theories flexibly to solve practical problems. According to the training objectives of management professionals and the characteristics of statistics courses, combined with the teaching status and development trend of management statistics courses at home and abroad, aim to cultivate students' applied statistical ability, this paper try to construct the teaching mode of "classroom teaching, experimental teaching and statistical investigation practice".

### Analysis of Current Teaching Situation and Existing Problems

#### 1. Emphasis on Theory Teaching, Light Practice Teaching Link.

This teaching mode focuses on classroom teaching and emphasizes the learning of basic concepts, models and methods of statistics. It is highly systematic and conducive to students' comprehensive understanding of the knowledge system of statistics. However, this teaching model does not pay enough attention to the applicability of statistical methods, ignores the cultivation of students' independent learning ability, and ignores the cultivation and training of students' ability to use statistical theories and methods to analyze and solve practical problems.

#### 2. Lack of Learning and Training in Statistical Software.

In the modern computing technology so developed today, without the use of computer tools and corresponding statistical analysis software, there is no place for statistics. Therefore, in the teaching process of statistics, only teachers demonstrate the use of statistical software, but student lack of computer operation training, as a result, students only grasp the "fur" of statistics and do not grasp the core of statistics, only memorized the basic concepts and theories of statistics, but did not master the tools and means to apply statistical theories and methods to practice.

### The Teaching Development Trend of Statistics Course in Management Specialty

The teaching development trend of statistics course of management major presents the following characteristics: First, attach importance to case teaching method. In teaching, the teaching of statistical theories and methods is not based on rigid concepts and formula theorems, but based on

practical problems in social activities to elaborate the background of statistical theories and methods, application conditions and basic statistical ideas. Second, attach importance to the study of statistical analysis software. Through learning and mastering all kinds of statistical analysis software, students can quickly and simply process a large number of statistical data, so as to shift the focus to the analysis and interpretation of statistical output results, which truly reflects the practical value of statistics. Thirdly, pay attention to the training of students' comprehensive application ability. Students are required to conduct statistical analysis on specific problems in reality, and they can skillfully use the means and methods of data collection and data analysis, which not only expands the breadth and depth of statistical knowledge mastered by students, but also improves the social benefits of statistical results.

## **Exploration and Practice of Teaching Reform**

For students majoring in management, the teaching objective of statistics course should stress the cultivation of students' statistical ability, so that students can skillfully apply statistical theories and methods to analyze and solve practical problems.

### **1. Increase the Content of Experimental Teaching and Cultivate Students' Ability of Applying Statistical Analysis.**

The development of information technology and the strengthening of laboratory construction conditions create favorable conditions for the study and application of statistical methods. Make full use of computer technology to conduct statistical experiments, on the one hand to deepen students' understanding of theoretical knowledge, on the other hand to train students' software operation and application ability, improve students' application of statistical analysis ability. This is also the focus of the statistics curriculum reform.

First of all, a corresponding experimental teaching plan is designed for the above theoretical teaching content, and the theoretical teaching and experimental teaching are organically integrated. The ratio of teaching hours of theoretical teaching and experimental teaching is 2 to 1, and the ratio of teaching hours of theoretical teaching and experimental teaching is 1 to 1 through increasing extracurricular experiments. In the experimental teaching, the statistical method and the computer software application are combined together, the theoretical method is used to guide the experimental teaching, and some abstract and difficult statistical theories and methods are displayed intuitively in the experimental practice, so as to deepen students' understanding and mastery of theoretical knowledge. The two can promote each other and effectively combine.

Secondly, the MS Office Excel developed by Microsoft not only can make charts, but also provides a relatively powerful statistical analysis function, which is easy to master and easier to promote and use. Therefore, the experimental teaching of statistics course focuses on the learning and application of the statistical analysis function of Excel software, on the basis of mastering the statistical analysis function of Excel software, assisted by the learning and application of SPSS professional statistical software, so that students can understand and master SPSS more easily. The use of computer software can free students from a lot of tedious statistical calculation, and focus on the analysis of statistical models and results.

Finally, write the experiment report. This is an indispensable and important link in experimental teaching. In the process of writing the experimental report, on the one hand, students can consolidate and strengthen their grasp and understanding of the statistical analysis methods they have learned. On the other hand, it also strengthens students' ability to use statistical software. More importantly, the analysis of statistical output results is conducive to improving students' understanding and understanding of the application effect of statistical methods and improving their comprehensive analysis ability.

### **2. Reform the Course Teaching Mode and Cultivate the Students' Independent Learning Ability.**

The statistical course itself has the characteristics of combining science and art. The scientificity of knowledge teaching requires attention to basic concepts, models and methods. The artistry lies in

that it attaches more importance to the application and skills of basic concepts, models and methods of statistics in economic management and enterprise management, and emphasizes the correct practice of management statistics. For this reason, the teaching mode of statistics course should also be changed from the teaching mode based on theory teaching, and the research-based teaching should be introduced actively to cultivate the concept of students' active exploration and improve the application ability of students' statistical knowledge.

Research teaching is a heuristic, inquiry-style, discussion-style and participatory teaching mode, which is an important way to cultivate high-quality creative talents. In the classroom teaching, based on Dewey's "five-step teaching method", namely "situation - problem - hypothesis - solution - verification" five steps. By creating a situation similar to scientific research, students are guided to discover and master the basic theories and methods of statistics independently. In the process of problem discussion, mutual stimulation, cooperation and mutual assistance, students conduct exploratory learning, cultivate the ability to think, analyze and solve problems, develop the attitude and habit of inquiry, and gradually form the skills of exploration.

Statistics teaching emphasizes both theoretical learning and practical operation, and case teaching is the bridge between statistics theory and practice. Case is a miniature of the realistic problems, the introduction of the case provides students with a realistic training ground, the students to think, problems to be solved in the case analysis, research and discussion, choose a number of practical calculation and analysis of the statistical methods, and discuss the result of the calculation process and calculation, analysis and comparative evaluation, the final statistical conclusions. In this process, students' initiative has been fully mobilized, they have a better understanding of how to apply statistical methods to solve practical problems, and their ability to independently analyze and solve problems has also been improved.

### **3. Strengthen the Practice Teaching Link, Train The Student Practice Innovation Ability.**

Practical teaching not only includes classroom practice, such as classroom case discussion and experimental class, but also includes individual practice and group practice after class. After class personal practice mainly refers to homework and independent computer practice; Group practice is mainly carried out in groups under the guidance of teachers. Here the practice teaching link mainly refers to the group practice. For this reason, we organize students to conduct social practice surveys in groups, and students independently complete the complete statistical investigation process of "topic selection - sample selection - data collection - descriptive statistical analysis - statistical inference". In the process of social practice investigation, students should independently undertake the following specific work: First, observe and analyze practical problems, consult relevant literature, and propose research topics; Second, design sampling survey plan; Third, collect and organize data for statistical analysis; Fourth, further statistical inference and correlation analysis; Fifth, write the survey report. Finally, arrange appropriate time for each group to present their research results in class, and have other students and teachers comment on them. Through such practical teaching link, it not only cultivates students' consciousness of independent learning, active thinking, active exploration and spirit of solidarity and cooperation, but also cultivates students' innovative consciousness and ability to analyze and solve problems independently, so as to improve students' comprehensive quality.

## **Reference**

- [1] M.N. Zhao. Discussion on three typical classroom teaching modes in American universities -- taking educational courses as an example, *Comparative education study*. 4(2004) 11-15.
- [2] J.L. Liu, A comparative study of the teaching modes of Chinese and American higher education and its enlightenment, *Research on the development of higher education*. 2 (2013) 39-41.
- [3] J.L.Li and Y.L. Ma, Course construction and teaching reform of MBA management statistics, *Degree and postgraduate education*, 12(2007) 38-41.