Curriculum Reform of Data Analytical Skill Based on Real Business

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Abstract

The vocational education mode has been vastly developed during these years, and the class is the main platform to perform quality education, for which, changing the class teaching manner is imperative, so the most important thing is to improve the class teaching manner. This article talks about how to introduce the real business into class teaching of Data Analytical Skill, aims to alter the traditional teaching manner by describing the necessaries, outlines and contents of curriculum reform of this module.

Keywords

Real Business, Data Analysis, Curriculum Reform.

1. Introduction

1.1 The Importance of Developing Data Analytical Skill

According to the research of Ministry of Education institution of Teaching Guidance Committee of E-Business, the most ability demanded for E-business is internet marketing and data analysis, as a conclusion, Data Analytical Skill plays a very significant role in E-business. On the other side, data analysis is getting more important in the area of product design, marketing, operation, customer management and etc., especially in the era of big data recently. More and more companies get noticed of the value of the data and understand how to solve the real business problems by analyzing data. In the district of E-business, especially for internet retail, data analyses has become the basic daily work, some companies even set up department of data analysis, and hope to precisely get to know the company operation and customer behaviours, also observe more potential customers and enhance the user experience by looking into the crucial statistics.

1.2 The Current Status of Development of Data Analytical Skill

Nowadays there are more than 100 universities and colleges which have E-business program, but only dozens of them have set up data analyses related modules, such as Business Data Analysis and Data Mining, so there is a huge lack of the data science talents. Therefore, the most critical thing in the present for E-business is to spawn data analysts.

Even though several E-business programs regards operational manager as the major target job position for students in the future, some schools also have set up E-business Operation module, but unfortunately the module content doesn't show any ideas, manners or practice about data analysis, but still mainly confined only in the building, managing and promotion of online shops due to the limited resources from the schools and teachers. On the other hand, there are only a few data resources available which can be used in the teaching and the school class is so isolated form the real business, all of them will lead to the lack of industry activities and technical trainings based on real business environment for the students, so our graduates cannot match the requirements for E-business managers nowadays.

At present, there are some ongoing researches about data process and analysis. Hongyan Wang, who is a teacher in the logistic department of Wuhan Business College, proposed that the data related modules for E-business students should be so different from that of neither university nor computer science course, "less in algorithm, more in application", she also suggested that teachers should focus

on promoting the students' self-study motivation and adopt elicitation method of teaching ,which has been approved more suitable, based on real circumstance.

More, Hongmei Yin who now teaches in the Suzhou Jiangxiong vocational & technology school also stressed the importance of curriculum reform of Data Analytical Skill. School should set up more data related modules, in which the application of skills and the use of computer software must take the most weight, with the consideration of teaching staffs, class facilities and time feasibility.

2. The Exploration of Data Analytical Skill Based on the Integration of School Class And Real Business

2.1 The Outlines of Curriculum Reform

This article discussed about the disadvantages of traditional teaching manner and the real job competency requirements by the survey on companies and enterprises widely, then pointed out that the integration of real business work into class teaching is a big innovation for vocational education, follow by penetrating into the investigation of theoretical methods and teaching manners and emphasizing on the activity design, problem existed and implementing strategies. The outline of investigation is shown in Fig. 1.
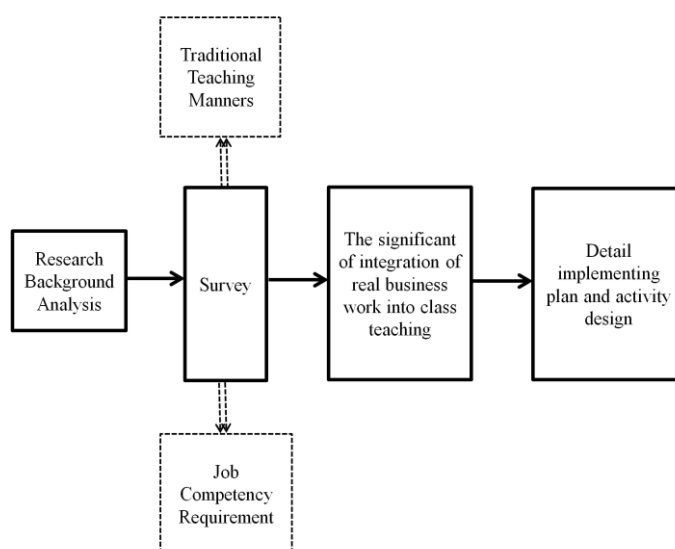

Fig. 1 The outline of investigation

2.2 The Module Content System Designed According to the Real Job Competency Requirements

Both questionnaire survey and interview survey have been carried out in order to reform and design Data Analytical Skill better, during these surveys it has been found that companies are more eager for experienced employees, therefore if our students can directly undertake these real business works in the class, they will be able to apply what they have learned into these real tasks, which would make additional superiority for the future job application.

There are three main core competency requirements about data related job positions by the analysis of these surveys.

2.2.1 Proficient in Data Analysis Tools

Now there are so many data analysis tools for E-business, it has been clear that during the real E-business operation, the most common data processing and analysis computer software is Excel, which is also widely used in many other areas.

2.2.2 Equipped with Sense of Data

So called "sense of data", means someone is subconsciously accustomed to solve the problems by data analysis, when facing different business issues, and is clear about how it gets improved and progressed by what he has done.

2.2.3 The Ability of Analytical Operation

The data analyst of E-business should be familiar with every steps of the E-business operation, so for the E-business students, the data analytical capability is extremely urgent.

2.3 Module Content System

2.3.1 Module Construction Based on the Core Competency Requirements and Real Business Data

Data Analytical Skill is the core module for E-business and it is more like a combination of theorems and practices. This module is mainly designed to develop the ideas about business data analysis and the application of data analysis tools for students, affords the students related knowledges about data theoretically and the abilities to use appropriate tools to implement data process and data analysis during practical works. This whole module is constructed based on the core competency requirements, and devoted to penetrate the real business data through whole teaching process. The first part is the Basic knowledge as well as Tools Application, the most common computer software—Excel is chosen to be the main analytical tool for this module. The students will be more professional at Excel by practices based on the real business data provided in the class. The second part is Analysis Principle，with the belief on the principle of correspondence with job requirements, picking out the relevant data for the practice, developing and strengthening the data consciousness for students. The third part is the E-business Data Analysis, the connection of operation and data is the essential ability for E-business students, school need to develop their analytical skill in order to enhance the competitiveness, and introduce real online shop data and products data from different industries into class training, which will accelerate the skills development about analytical operation and real problem solving. The teaching content system is shown in Fig. 2.
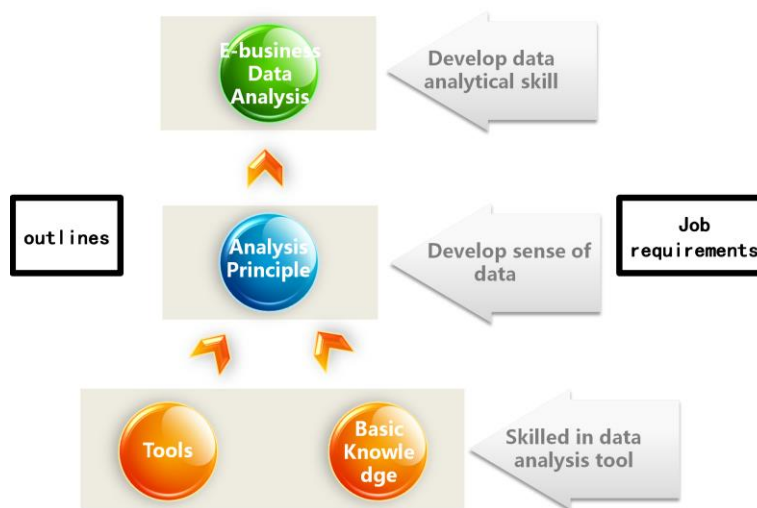

Fig. 2 The outline of teaching content system

2.3.2 Produce Appropriate Teaching Content According to the Outlines

Data Analytical Skill has main 4 different parts, i.e. Basic Knowledge, Software Application, Analysis Principle and E-business Data Analysis, the detail teaching contents and timetable is shown in Table 1.

Table 1 Teaching contents and Timetable

No	Contents			Knowledge obtained	Real Business Application
	Parts	Meanings	Units		

1	Basic Knowledge	Describe overview about the module	Summary of data process and analysis	Understand the concept of data process and analysis	Demonstrate the importance of data analysis based on true business cases
2	Tool Application	Skilled in the analytical tool	Management of E-business data	Master the common manners to collect daily E-business data and implement management	Given series tasks based on real business data from companies
			Management of Sales data	Use Excel to build and manage sales table	
			Management of HR data	Use Excel to build and manage HR table	
3	Analysis Principle	Introduction and Application of analytical principle	Data descriptions—tables and graphs	Produce appropriate tables and graphs to describe data	Build the right data analytical ideas by providing real data and manners adopted in companies
			Data descriptions—statistic index	Produce appropriate statistic index to describe data	
			Correlation and regression	understand the concept of correlation and can create linear regression in Excel	
			Time series model	understand the concept of time series and can create time series model in Excel	
4	E-business data analysis	Introduction and application of data analysis based on E-business, the extension of last part.	The analysis and control of purchasing cost	Use Excel to analysis the costs and decide the right time for purchase	Break the company program into different fragments of tasks and let the students get familiar with real E-business works
			Stock management and analysis	Understand the concept of stock and use Excel to create, manage and analysis stock information	
			Customer behavior analysis	Use Excel to analysis customer information and get useful conclusion	
			Hot goods analysis	Analysis hot goods by the key words and their prices.	
			Shop items analysis	Analysis the ranking, price and promotion effect of shop items	

2.4 Class Teaching Manners

All the tasks gone through in the class are extracted from the real business cases, and the business program is destructed into different small fragments of works, which are given to the students as practices. This will motivate students' enthusiasm and interests, and also enhance the students' vocational sense as well as capability

Evaluating students module results objectively will push the students to finish up their practical works, and also promote creativity spirits. As a conclusion, a set of perfect and effective examination mechanism should be constructed for the practical teaching based on real business. Data Analytical

Skill stresses on the importance of learning process in peacetime, so formative assessment is adopted in the final evaluation. The final results consists of three parts, class performance, practices results and final assessments, the data used in which are all from real companies and real business programs.

Applying MyCloud to improve the class interaction and resource communion, the communication between students and teachers, also among those students, can be more convenient with upon the Chaoxing teaching platform.

3. Conclusion

The curriculum reform of Data Analytical Skill based on real business has been carried on at present, and the effects are obvious. The students are delighted that they can get to know some real business programs, which will eliminate the obstructions and bring huge help for the future work. In addition, to achieve more improvement and enhancement, the application of SPSS and other analytical tools can also been considered, in order to extend students view better and promote employability.

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