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RESEARCH ARTICLE

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MBA Students' Quality Improvement: The Correlation Analysis of Students' Personal Traits and Attitudes towards Teaching Methods at a Chinese University

Abstract MBA education has become the fastest growing segment of education in China in recent years and a segment that can now be considered indispensible. However, how best to teach it has long been a source of debate. One of the key issues is how to match student traits with teaching methods. While engaged as teachers of marketing management, the authors collected data by questionnaire, carried out empirical research and data comparison, and undertook contingency analysis. It was found that different personal traits in students lead to different attitudes towards teaching methods. A student's major in college, gender, and sector of employment has little influence on attitudes towards teaching methods, while age, the most sensitive factor, plays the biggest role, followed by job and class. Therefore, these factors should be taken into consideration when arranging classes, developing the curriculum, and planning teaching methods.

Keywords MBA education, personal traits, teaching methods, correlation, contingency analysis

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Introduction

Owing to China's prominent status in the global economy and political arena, more and more countries around the world want to understand China, and this has sped up China's internationalization in various fields. A key example is MBA education. In the past 10 years in particular, the internationalization of China's MBA education has expanded from focusing merely on improving teaching methods, materials and teachers' qualification, to considering the background of MBA students when it comes to designing teaching activities and using Chinese case studies (Huang, 2011). This process has been further accelerated as a result of China's national policies. Ministry of Education of the People's Republic of China (2013) has put policies in place to deepen reform of graduate education, promote soft skills training and interdisciplinary education with the aim of keeping a balance between Chinese roots and a global perspective.

MBA teaching is characterized by translating theory into practice. During the teaching process, knowledge is explained by referring to social realities and phenomena and applied to practical use, one of the main targets of MBA education. Therefore, it is essential to use a variety of teaching methods according to the personal traits of the students undergoing training. It is significant to study the attitudes of the students towards different teaching methods.

The Present Research Status at Home and Abroad

A total of 192 master's and doctoral dissertations, articles, and proceeding of important academic conferences on MBA education were collected from China National Knowledge Infrastructure (CNKI) databases from 1995 to 2013. These materials show that most research has focused on the direction and strategy of MBA education in China, while studies on curriculum and teaching modes account for less than 10% of the total. One hundred and fifty four overseas research results were also found by searching the Web of Knowledge (SCI, SSCI, ISTP, CSCD) databases. Most have been written by EU and US scholars and focus on Western issues, while articles on China's MBA education mainly discuss its developmental direction and course design.

Research by Western scholars has surpassed the macro-qualitative study stage and has entered a detailed, precise, and systematic phase. These academic achievements can be divided into two arenas. One focus is teaching methods. For example Arbaugh (2013) did a survey to find out whether online MBA course content was appropriate. He targeted students with two years' MBA learning experience who had taken more than 50 MBA online courses. He analyzed the relations among social existence, cognitive existence, and teaching effectiveness. This research studied standard social cognition and gave no detailed information about student traits. Research on the effects of all kinds of teaching activities and communication methods, including team study, club activities, sustainable alumni networks, and the internet, have also been carried out (see Cheng & Han, 2012; Krass & Ovchinnikov, 2006; Keller & Kros, 2000; Arbaugh, 2010, 2013). Research at Rotman School of Management of University of Toronto discovered that the school's MBA curriculum, by using computers to divide students into many parallel learning groups for different courses, has enabled the school to save on manpower and generate a higher level of satisfaction for students and teachers (Krass & Ovchinnikov, 2006). Obviously, in terms of teaching methods, none of these studies mentioned whether or not teaching methods should be adjusted according to students' traits.

The other focus of research to date has been the evaluation of teaching effect. Some scholars (e.g., Arbaugh, 2013; Jiao, 2009), using factor analysis and principal component analysis, have evaluated the three interdependent variables of teaching effects, self-study, and distance education medium. They have analyzed, from teacher and student perspectives, the influence of 33 kinds of teaching activities on teaching effects, self-study, and sociability. Besides, teaching activities weighing more on communication or instruction have been categorized (Arbaugh, 2013). But there is still a lack of stress on student traits. A correlation analysis, based on 10 aspects of student learning performance (such as whether or not they could understand the given material and discussion topics in class) and 22 kinds of teaching methods, suggests that instructors' heuristic guidance plays the bigger role in teaching effect (Arbaugh, 2010). The article did not discuss whether methods of inspiring students should be changed according to their personal traits. The U.S. army reserve officers' leadership development plan has been used to assess the skills of MBA students. The main purpose was to evaluate students' skills in negotiation, leadership, and teamwork by factoring students' personal performance and the effectiveness of the training course as a whole (Foster & Farquharson, 2006). The article touched personal qualities in management, but lacked consideration of the influence of gender difference in teaching effect.

With the trend being for China's MBA students to be fairly young, more attention should be paid to improving MBA education quality in terms of design and certification by quality management systems, quality control, evaluation, and enhancing students' levels of satisfaction (Jiao, 2009; Zhou & Gao, 2008; Zheng, 2007; Chen, 2005; Zhang & Zheng, 2001). Quality of education should be evaluated by reviewing MBA dissertations and instructors' teaching effectiveness (Shi, Xia, & Chen, 2010). Multiple approaches, for instance, offering work experience, a double-teacher model, and the attendance of entrepreneur forums and industry clubs, can be applied to improve students' practical and innovation abilities (Que, 2011; Ding, Huo, & Wang, 2012; Qian, 2010).

While optimizing the design of curriculum, attention should also be paid to teaching method optimization (Sun, Liu, & Zhao, 2010). Over the past two decades of China's MBA education, the so-called "six excesses and six insufficiencies" (Li, Xiao, & Zhang, 2002), have been addressed, but shortcomings still exist including a lack of teachers, textbooks, study cases, especially the development of "soft skill" courses and integral courses, imbalanced education resources between different regions and schools and different management levels (Ma, 2011; Yi, 2003; Bing, 2011; Li & Wu, 2009).

From the above, empirical research on the effects of MBA education have been conducted by overseas scholars, but their achievements have been limited. Domestic research in China has mainly focused on the macro-level, with only a few empirical studies having been conducted. What is more, Chinese and foreign researchers have hardly considered MBA students' personal traits at all. Thus, it is essential to do empirical research on attitudes towards efficacy in Chinese MBA education.

Methods and Hypotheses

According to the requirements of the National MBA Education Steering Committee, the MBA curriculum comprises core and non-core courses. The core courses include enterprise management training modules, such as marketing, operation, strategy, finance, and human resources. Methods of using such knowledge vary with social and economic development levels and stages. Therefore, the material should be taught in systematic and multi-level forms and activities should be incorporated to help students combine learning with practical application.

With reference to the concept of marketing, customers' demands tend to be diverse, as are MBA students' demands. Students' personal experiences and their own achievements also vary. We may therefore assume that there is a certain relation between students' personal traits and the attitudes of students' towards different teaching methods.

This paper investigates both teaching and learning activities during marketing management training modules, with the aim of determining how different personal traits interact with teaching methods to produce varied learning experiences, and to obtain an idea of how teaching may be best designed and adjusted in order to improve teaching efficacy.

Design of the Questionnaire

Marketing management is both a subject with a strong applicable purpose and a core course in MBA education. Therefore, in order to improve teaching quality and reflect on its practical features, methods including case analysis, reporting, and communication are applied in the teaching process in addition to formal lectures. Real practical simulation is expected to improve teaching effect. Due to different personal traits, students' attitudes towards teaching approaches vary, affecting the final teaching results. Furthermore, overall teaching quality is influenced by individual teaching effect. Accordingly, to improve MBA teaching quality, students' personal traits must be examined and tracked.

Therefore, thanks to various teaching opportunities (including crash courses, weekend classes, and full-time classes), we have collected sufficient data through questionnaires filled in by all students after each marketing management class between 2010 and 2013.

In order to enrich and obtain systematic information for the study, questionnaires sought to uncover differences between learning demands and teaching methods. During the survey process, students cooperated actively with the authors.

The respondents were those who participated in the teaching activities themselves as this research is an empirical study. Therefore, the data is inevitably affected by human factors, such as an understanding of questions and willingness to cooperate. The premises of using such a questionnaire are as follows:

- Premise I: The respondents are rational;
- Premise II: The respondents have participated in almost all of the teaching activities;
- Premise III: The respondents can understand all the questions correctly.

The way data processed and analyzed, and the conditions in which it was collected will have an influence on the final results. Thus, the conclusions of this research should be read together with an appreciation for the specific methods adopted and the objective environment.

The data was collected through questionnaire surveys, split into two parts. The first half of the questionnaire (basic items) collected students' basic information, including students' personal traits (undergraduate disciplinary nature, gender, age, industry of current job). The second half (survey items) included questions on students' attitudes towards teaching methods and teaching efficacy (see Table 1).

Table 1 Structure of Questionnaire

Distribution of questionnaire	Categories of survey items	Detailed items	Answer types	Illustration of answers
Basic items	Basics of respondents	1. Teaching methods	Close-ended	AB…E Five choices
		2. Undergraduate disciplinary nature		ABC represent students' majors in science, engineering, and liberal arts, respectively
		3. Jobs		AB…L represent different vocations
		4. Industry of current job		AB…O represent different industry
		5. Seniority		ABCD represent different working years
		6. Age		ABCD represent different age
		7. Gender		AB represent male and female, respectively
Survey Items	Effects of different kinds of teaching methods	8. Learn professional knowledge systematically	Close-ended	AB…H represent different kind of teaching methods
		9. Improve practical ability		AB…H represent different kinds of teaching methods
		10. Make up for a lack of ability		AB…H represent different kinds of teaching methods
		11. The most impressive or popular		AB…H represent different kinds of teaching methods

(*To be continued*)

(*Continued*)

Distribution of questionnaire	Categories of survey items	Detailed items	Answer types	Illustration of answers
Survey Items	The suitability of teaching plan	12. The greatest gains	Close-ended	AB…E represent different gains
		13. The proportion suitability of course hours in main teaching methods		AB…E represent different degrees of suitability
		14. The needs of adjusting course hours proportion		AB…E represent opinions about course hours adjustment
	Others	15. Other opinions and suggestions	Open-ended	Asking for opinions and suggestions about the course

The data used in the research was obtained from 68 students spread over two kinds of classes between 2010 and 2013. Their ages ranged from 20 to 50, and there were many differences in their undergraduate disciplinary background, industry of current job and the years of working. Sixty valid questionnaires in total were obtained. The qualification ratio was 88.24%. Using these valid questionnaires, we have made some analyses, summarized experiences and found out the answer to certain problems, thus helping to lay a solid foundation for further improvements in teaching methods.

Descriptive Analyses of Responders' Basics

The obtained 60 valid questionnaires were classified and summarized in light of class types, namely weekend or crash courses. 76.67% of survey participants were from weekend classes, and 23.33% from crash courses. The ratio is 3:1, which is essentially the same as for MBA students in total. The sample structure is therefore nearly the same as in real conditions, and thus highly representative.

According to the questionnaire analysis, we can infer that the undergraduate majors of the MBA cohort include science, engineering, and liberal arts, accounting for 31.7%, 23.3%, and 45%, respectively. The result shows that students studying for a liberal arts degree, and those studying for a science and engineering degree participate on a fifty-fifty basis.

Judging from the job market, we found that civil servants, marketing staff, and technicians make up the largest proportion (about 46.67%), followed by corporate executives and financial officers (approximately 18%), and none of the students go on to engage in managing production and quality control. Besides these jobs, freelance or nontraditional workers who are not in the scope of given standards amount to about 20% of the total sample.

The largest number students surveyed are from the electronics and energy industries, followed by workers from finance, trade, and government agencies. In addition, some students come from mining, consulting, tourism industries, training and research institutes, but none are from chemical or transportation industries or the military. In addition, the ratio of students from no given industry is relatively high. They may be unemployed or people without regular work. Compared with those holding steady jobs, they have different personal career plans and perspectives on life. For example, to secure permanent household registration in Beijing or get a better job may be a major goal.

A total of 27% of respondents had less than five years of work experience, 28% had five to eight years of experience, and 45% had more than eight years. Obviously, the last group is dominant among MBA students. Students under 25 years old accounted for 7%, those aged between 26 and 30 accounted for 37%, and 31 to 40-year-olds made up 54%, constituting the largest group of MBA students. From a gender perspective, 57% were male and 43% female.

In conclusion, students with a background in science and engineering were almost equal to those who in liberal arts, a beneficial ratio for this study. Besides, students had different backgrounds and jobs. Through learning together, they could know more about each other's industry and job characteristics, which could benefit their own work performance after graduation. In addition, most students had substantial working experience and were between 30 and 40 years old, thus in the prime of life and a period of career development.

Study Methods

The variables in this study belong to categorical variables, so contingency analysis was used. Contingency analysis mainly consists of three steps. The first step is to do a preliminarily processing of data to produce an observations distribution table. The second step is to make the distribution table of expected values based on the average value of the observations distribution table. The third step is to test independency or goodness of fit, testing these with the aid of the given significance level α and the calculated value χ^2. The calculated correlation coefficient c and correlation coefficient V can be used to judge the independency or goodness of fit of the variables.

Formula 1 shows the calculation of value χ^2. Formula 2 and Formula 3 show the calculation of correlation coefficient c and correlation coefficient V.

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} \tag{1}$$

Among them: f_0 is the observation frequency, f_e is expectation frequency.

$$c = \sqrt{\frac{\chi^2}{\chi^2 + n}} \tag{2}$$

$$V = \sqrt{\frac{\chi^2}{n \cdot Min\{(R-1),(C-1)\}}} \tag{3}$$

Among them: n represents the number of samples; R represents the row number of the contingency table; C represents the column number of the contingency table.

The values of correlation coefficients c and V are in the range 0 to 1. The closer to 1, the higher the correlation is between the two categorical variables. When the value is 0, these two categorical variables are completely independent.

Research Assumptions

The purpose of this paper is to study the influence of the students' personal traits on teaching methods and teaching effects. The personal traits include undergraduate disciplinary background, gender, age, and industry of current job. So the assumptions of this study are as follows:

- Assumption I: MBA students' undergraduate disciplinary background has an influence on their attitudes towards teaching methods and teaching efficacy;
- Assumption II: The gender of MBA students has an influence on their attitudes towards teaching methods and teaching efficacy;
- Assumption III: The age of MBA students has an influence on their attitudes towards teaching methods and teaching efficacy;
- Assumption IV: The industry of the current job of MBA students has an influence on their attitudes towards teaching methods and teaching efficacy.

Those assumptions could be examined through summarizing and analyzing all the data, making correlation analysis between MBA students' traits, teaching methods and teaching efficacy.

Students' Individual Differences and Teaching Method Preferences

There are eight kinds of teaching methods that tend to be used in MBA education (Fig. 1) and these are also the commonest methods used in marketing management teaching. In this survey questionnaires, ABCDEFGH stand for classroom instruction, discussion of questions, proposition study, experimental simulation, analysis of cases, reports writing, summing-up speeches, and self-learning, respectively.

This study is designed to understand the relation between teaching method and efficacy. Teaching efficacy can be analyzed and judged based on students' choices of survey items 8, 9, 10, and 11 in Table 1.

The survey item 8 aims to find out "the most effective method to learn professional knowledge systemically," and those ranking on the top three spots are analysis of cases, experimental simulation, and classroom instruction (Fig. 1).

The survey item 9 is designed to understand "the most effective method to promote one's ability of knowledge application," and those ranking on the top three spots are experimental simulation, analysis of case, and discussion of questions (Fig. 2).

The purpose of survey item 10 is to know "the most effective method to make up for one's ability shortage," and those ranking in the top three are discussion of questions, analysis of cases, and summing-up speeches (Fig. 3).

The aim of survey item 11 is to explore "the most impressive or the most popular methods," and those ranking on the top three spots are experimental simulation, discussion of questions, and analysis of cases (Fig. 4).

According to the summary of the above four survey items, we can infer that analysis of cases is the most acceptable teaching method for most students, followed by experimental simulation, and discussion of questions. These three methods emphasize the participation of students and interactive teaching. Usually,

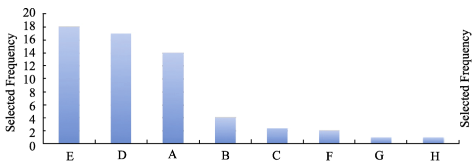

Fig. 1 Statistics of Selection about Survey Item 8

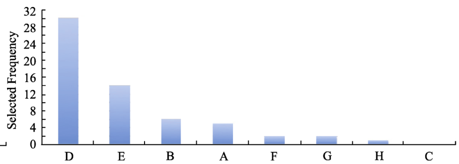

Fig. 2 Statistics of Selection about Survey Item 9

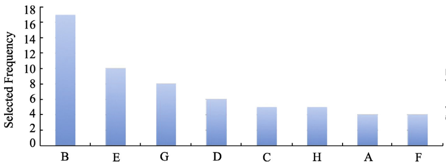

Fig. 3 Statistics of Selection about Survey Item 10

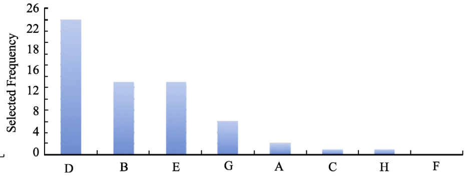

Fig. 4 Statistics of Selection about Survey Item 11

a course, no matter whether a crash course or a weekend class, needs half a day or a day. This kind of teaching method can hardly stimulate students' learning enthusiasm and may lead to auditory fatigue. Methods with highly subjective levels of initiative and participation are popular. The most unpopular methods for students are report writing, self-learning, and proposition study. Perhaps, the main reason is that these methods require a lot of time. Meanwhile, classroom instruction is generally acceptable.

Based on the students' opinions and attitudes to the curriculum and teaching content, we find that about two-thirds of the students agree that their ability in systems analysis could be improved by using all those teaching methods in an integral way. Besides, they also believe that the present teaching contents and class period allocation does not need to be significantly adjusted. What is needed is to increase the proportion of cases analyses and experimental simulation by an appropriate degree.

Correlation Analyses between Students' Personal Traits and the Preferences for Teaching Methods

The independence tests between basic and survey items are used to find out the relationship between personal traits and teaching methods. The subtotal results show that different students from a same class, or students from different types of classes, have various selections for the survey items. The test for the significance of these differences can help us understand different learners' preferences for different teaching methods. Therefore, in-depth analysis on the different parts can effectively help improve teaching efficacy in the future.

According to the listed information in Table 1, the main contents of "personal traits" are the respondents' basic information, and "the results of teaching methods," namely their feelings or gains after the teaching process, are the main research items.

The Independence Tests of "Undergraduate Disciplinary Backgrounds" and Results of Applying These Teaching Methods

According to the data in Table 2 and Table 3, we can process the data from "undergraduate disciplinary backgrounds" (survey item 2) and "the most effective way of learning professional knowledge systematically" (survey item 8), with contingency analyses method.

Due to an obvious imbalance in data frequency distribution for different teaching methods in Table 3, we can combine the four teaching methods including Researches on Propositions (C), Reports Writing (F), Summing-up Speeches (G), and Self-Study (H), and analyze them together as "other." The expectations' distribution in Table 5 is calculated based on the observations' distribution of the combined table.

As seen in Table 3, whatever the undergraduate disciplinary background of the students, they all have their biggest expectation values on case analysis, that is to say they all think case analysis as the most effective method to acquire knowledge.

Substituting the data of Table 2 and Table 3 into Formula 1, and using Excel to calculate, we have a conclusion result that $\chi^2 = 8.5759$ (see Table 4).

Similarly, we can build a contingency distribution table which summarizes item 2 and "the most effective teaching method of improving knowledge application ability" (investigation item 9; see Table 5).

Table 5 shows that all respondents believe that D (Experimental Simulation) is the most effective method of improving practical ability, no matter what undergraduate disciplinary background they have.

We also can obtain a contingency distribution table which summarizes item 2 and the most effective teaching method that compensates for a lack of ability (survey item 10; see Table 6).

Table 6 shows that all the students think "other" (Report Writing, Summing-up Speeches and Self-study) are the most effective methods to make up for deficiencies, no matter their undergraduate disciplinary backgrounds.

Contingency distribution table about item 2 and the most impressive or popular teaching method (survey item 11) have also been gathered (see Table 7).

Table 2 Distribution Table of Observations F_0 about Basic Item 2 and Survey Item 8

		Teaching Methods								
		Classroom Instruction (A)	Discussion of Questions (B)	Proposition Research (C)	Experimental Simulation (D)	Case Analysis (E)	Reports Writing (F)	Summing-up Speeches (G)	Self-Study (H)	Total
Subject Division	Science	5	0	0	4	8	1	0	1	19
	Engineering	2	0	2	6	4	0	0	0	14
	Liberal arts	7	4	1	7	6	1	1	0	27
	Total	14	4	3	17	18	2	1	1	60

Table 3 Distribution Table of Expectation F_0

		Teaching Methods					
		Classroom Instruction (A)	Discussion of Questions (B)	Experimental Simulation (D)	Case Analysis (E)	Other	Total
Subject Division	Science	4.4333	1.2667	5.3833	5.7	2.2167	19
	Engineering	3.2667	0.9333	3.9667	4.2	1.6333	14
	Liberal arts	6.3	1.8	7.65	8.1	3.15	27
	Total	14	4	17	18	7	60

Table 4 Calculation Sheet about Value χ^2

		Teaching Methods					
		Classroom instruction (A)	Discussion of questions (B)	Experimental simulation (D)	Case analysis (E)	Other	Total
Subject division	Science	0.0724	1.2667	0.3555	0.9281	0.0212	2.6439
	Engineering	0.4912	0.9333	1.0423	0.0095	0.0823	2.5586
	Liberal arts	0.0778	2.6889	0.0552	0.5444	0.0071	3.3734
	Total	0.6414	4.8889	1.453	1.482	0.1106	8.5759

Table 5 Contingency Distribution Table F_0 about Item 2 and Survey Item 9

		Teaching Methods					
		Classroom instruction (A)	Discussion of questions (B)	Experimental simulation (D)	Case analysis (E)	Other	Total
Subject division	Science	0	1	11	4	3	19
	Engineering	2	2	8	2	0	14
	Liberal arts	3	4	11	7	2	27
	Total	5	7	30	13	5	60

Table 6 Contingency Distribution Table F_0 about Item 2 and Survey Item 10

		Teaching Methods					
		Classroom instruction (A)	Discussion of questions (B)	Experimental simulation (D)	Case analysis (E)	Other	Total
Subject division	Science	1	5	2	3	8	19
	Engineering	0	6	1	1	6	14
	Liberal arts	3	6	3	6	9	27
	Total	4	17	6	10	23	60

Table 7 Contingency Distribution Table F_0 about Item 2 and Survey Item 11

		Teaching Methods					
Subject division		Classroom instruction (A)	Discussion of questions (B)	Experimental simulation (D)	Case analysis (E)	Other	Total
	Science	0	3	10	2	4	19
	Engineering	0	3	6	3	2	14
	Liberal arts	2	7	8	8	2	27
	Total	2	13	24	13	8	60

Table 7 shows that students majoring in science and engineering before their MBA study think that D (experimental simulation) is the most effective method, and students majoring in liberal arts think that experimental simulation and case analysis are the most effective methods.

According to the distribution tables of observations in Table 5, Table 6, and Table 7, the value χ^2 between survey items, correlation coefficient c and correlation coefficient V can be calculated using Excel (see Table 8).

Table 8 Independence Test between Item 2 and Survey Items

Survey items	Value of χ^2	Critical value of $\chi^2_{0.05}(8)$	Correlation coefficient c	Correlation coefficient V	Conclusion of independent test
8. Learn professional knowledge systematically	8.5759	15.5073	0.3536	0.2673	Separate and related degree is low
9. Improve the practical ability	7.2949	15.5073	0.3292	0.2465	Separate and related degree is low
10. Make up for a lack of ability	4.9599	15.5073	0.2763	0.2033	Separate and related degree is low
11. The most impressive or popular	7.9350	15.5073	0.3418	0.2571	Separate and related degree is low

When the significance level is $\alpha = 0.05$, we may obtain the critical value. According to $\chi^2_{0.05}(8) = 15.5073 > \chi^2 = 8.5759$, we believe those learners' undergraduate disciplines and the most effective way they select to absorb professional knowledge are independent of each other when the significance level is under 0.05.

$c = 0.3536$, $V = 0.2673$ were calculated by using Formula 2 and Formula 3, which means the degree of correlation between them is relatively low.

According to Table 8, we find out that "undergraduate disciplinary background" and "teaching methods" are independent from each other, but the degrees of correlation are different. Referring to the results, "undergraduate disciplinary background" has the highest correlation with "the most effective teaching method to receive professional knowledge systemically" followed by a correlation with "the most impressive or popular teaching method," and "the most effective teaching method to improve the capability of knowledge application." The lowest degree of correlation is "the effective teaching method to make up for a lack of ability," which means students have nearly the same view on it. Therefore, differences in undergraduate disciplinary background do not need to be taken into consideration in MBA education.

Independence Test between the Characteristics of "Jobs" and "Industry" and Teaching Method Preferences

Considering the diversity on the jobs distribution and the requirements for the frequency distribution of contingency analysis, we combined some data of jobs and industry in the original questionnaires. For example, item 3 in basics survey, jobs, listed 12 choices in the original questionnaire, and in order to make it easier for data processing, we combined the answer A to D as procurement, production and sales, the answer E to K as management, and the rest as the "other." While item 4 in basics survey (Industry), was classified into the fourth parts. Finally, they are listed as industry (including A, E, F, G, I), finance and trade (including B, H, J, K), research and education (including C, D, L) and "other" (including the rest).

Using the independence test listed above, we have conducted the independence tests between 3 (Jobs), 4 (Industry), and survey items 8, 9, 10 and 11. The results are shown in Table 9.

For the number of classification of each basics item is different, while teaching methods have five types in total, thus, the critical values $\chi^2_{\alpha}(n)$ of every basics item and the survey items are different. The critical values are shown in Table 10

Table 9 Independence Tests between Basics Items 3, 4 and Survey Items 8 to 11

		Survey Items											
		8. Learn professional knowledge systematically			9. Improve the practical ability			10. Make up for a lack of ability			11. The most impressive or popular		
		χ^2	c	c	χ^2	c	V	χ^2	c	V	χ^2	c	**V**
Basic items	3. Jobs	8.0341	0.3436	0.2587	5.5391	0.2907	0.2148	11.6622	0.4034	0.3117	15.4096	0.4520	0.3583
	4. Industry of current job	12.838	0.4198	0.2671	10.7564	0.3899	0.2445	11.0363	0.3942	0.2476	14.8460	0.4454	0.2872

Table 10 Critical Values of Different Test Items under Different Significance Levels

		Teaching methods			
		Degrees of freedom n	Critical value $\chi^2_{0.05}(n)$	Critical value $\chi^2_{0.10}(n)$	Critical value $\chi^2_{0.25}(n)$
Basic items	3. Jobs (three kinds)	8	15.507	13.362	10.219
	4. Industry of current job (four kinds)	12	21.026	18.549	14.845

when the significance levels are 0.05, 0.10 and 0.25.

According to Tables 9 and 10, we find out that when the significance level is under 0.05, the items (the jobs and industry) of the characteristics of the MBA students are independent from the results using different teaching methods.

Comparatively, the relationship between jobs and the survey items is much closer. When the significance level is 0.10, Jobs and item 11 (the most impressive or popular teaching method) are relevant. When the significance level is 0.25, Jobs and item 10 (the most efficient teaching method to make up for a lack of ability) are also relevant.

However, the relationship between Industry and the survey items is more independent. Under the significance levels of 0.05 and 0.1, their relationships are all independent. When the significance level is 0.25, Industry is relevant with item 11 (the most impressive or popular teaching method). In general, Industry has a low relation with the survey items.

Independence Test between Traits of "Age," "Gender," and "Seniority," and Teaching Method Preferences

In the basic item 6 (Age), because there is only one student older than 41, we have added him into the upper group. We have hereby conducted independence tests between Age, Gender, Seniority and the survey items 8 to 11. The results are shown in Table 11.

The number of categories of every basic item is different. For example, items Seniority and Age are classified into three categories, while item Gender is classified into two and teaching methods into five. Under the significant levels of 0.05 and 0.10, the critical values are shown in Table 12.

From Table 11 and Table 12, as all the results are under the significant level of 0.05, they all appear independent expect the relationship between basic item 6 and survey item 10 (the most efficient teaching method to make up for a lack of ability), which has been found to be relevant ($\chi^2 = 18.2241 > \chi^2_{0.05}(8) = 15.507$). It means that students of different ages have various opinions on "the most efficient teaching method to make up a lack of ability," while their attitudes to other aspects are similar.

Table 11 Independence Tests Table for Basic Items 5 to 7 and Survey Items 8 to 11

		Survey items											
		8. Learn professional knowledge systematically			9. Improve practical ability			10. Make up for a lack of ability			11. The most impressive or popular		
		χ^2	c	V	χ^2	c	V	χ^2	c	V	χ^2	c	V
Basic items	5. Seniority	14.9304	0.4464	0.3527	3.9735	0.2492	0.1820	4.2227	0.2564	0.1876	4.4725	0.2634	0.1931
	6. Age	15.3044	0.4508	0.3571	13.5808	0.4296	0.3364	18.2241	0.4827	0.3897	14.0890	0.4361	0.3426
	7. Gender	2.8731	0.2138	0.2188	1.9362	0.1768	0.1796	1.1429	0.1367	0.1380	4.6702	0.2687	0.2790

Table 12 Critical Values of Freedom Degrees about Different Test Items

	Teaching methods			
	Teaching method basics item	Degrees of freedom n	Critical value $\chi^2_{0.05}(n)$	Critical value $\chi^2_{0.10}(n)$
Basic items	5. Seniority (three kinds)	8	15.507	13.362
	6. Age (three kinds)	8	15.507	13.362
	7. Gender (two kinds)	4	9.448	7.779

However, when the significant level is 0.10, item Seniority and survey item 8 (the most effective teaching method to receive professional knowledge systemically) are shown as relevant, and item Age and survey items 8 to 11 are shown as relevant, too. In summary, attitudes and preferences of students of different ages vary for different teaching methods.

The Tests of Goodness of Fit between Different Types of Teaching Classes and Teaching Method Preferences

In order to understand differences in expectation and perception of the course for MBA learners in different types of teaching classes (including crash courses and weekend classes), we have conducted tests of goodness of fit.

Based on Table 2 and Table 3, a contingency frequency distribution table for Class Type and survey item 8 can be established (see Table 13).

An expectation distribution table can be established according to Table 13 (see Table 14).

Based on Tables 13 and 14, $\chi^2 = 7.58 < \chi^2_{0.05}(7) = 14.0671$ can be calculated, namely that under the significance level of $\alpha = 0.05$, there are no obvious differences. Similarly, the values χ^2 and the correlation coefficients of the items 9 to 11 in different classes can be calculated. Under different significance levels, we get results as shown in Table 15.

According to the Table 15, under the significance level of 0.05, there is no difference between "classes" and survey items 8 to 10 in attitude, while "classes" and investigation item 11 (the most impressive or popular teaching method) show obvious differences. Under the significance level of 0.10, the results are the same as in the above condition. However, under the significance level of 0.25, students in different classes show different attitudes to the survey item 10 (the most effective teaching method for making up ability shortages). Only under the significance level of 0.50 do students in different classes show different attitudes toward each survey item.

Table 13 Observation F_0 Distribution Table of Two Different Kinds of Classes for Survey Item 8

		Teaching methods								
		Classroom Instruction (A)	Discussion of Questions (B)	Proposition Study (C)	Experimental Simulation (D)	Case Analysis (E)	Reports Writing (F)	Summing-up Speeches (G)	Self-learning (H)	Total
Class	Weekend class	9	1	3	15	12	2	0	1	43
	Crash class	5	3	0	2	6	0	1	0	17
	Sum	14	4	3	17	18	2	1	1	60

Table 14 Expectation F_0 Distribution Table of Two Types of Classes for Survey Item 8

		Teaching methods							
		Classroom instruction (A)	Discussion of questions (B)	Proposition study (C)	Experimental simulation (D)	Case analysis (E)	Reports writing (F)	Summing-up speeches (G)	Self-learning (H)
Class	Weekend class	10.03	2.87	2.15	12.2	12.9	1.433	0.72	0.717
	Crash class	3.967	1.13	0.85	4.82	5.1	0.567	0.28	0.283

Table 15 Independence Tests between Different Types of Classes and Survey Items

Survey items	Value of χ^2	Critical value of $\chi^2_\alpha(n)$				Correlation coefficient c	Correlation coefficient V
		0.05	0.10	0.25	0.50		
8. Learn professional knowledge systematically	7.58	14.0671	12.017	9.037	6.346	0.3349	0.2513
9. Improve practical ability	8.49	14.0671	12.017	9.037	6.346	0.3521	0.2660
10. Make up for a lack of ability	10.00	14.0671	12.017	9.037	6.346	0.3780	0.2887
11. The most impressive or popular teaching method	15.50	14.0671	12.017	9.037	6.346	0.4531	0.3594

Conclusions and Suggestions

Main Conclusions

In conclusion, differences between MBA students in terms of their undergraduate disciplinary background, seniority, age, gender, etc. have degrees of correlations with teaching methods. Research conclusions confirm the assumption that MBA students' personal traits lead to different teaching methods preferences.

The data obtained from this survey reflect that, for the same issue, the views of students with backgrounds in science/engineering are more similar, while the views of those with a background in liberal arts are more varied and have relatively less obvious tendencies. The main conclusions drawn from the above analysis are as follows.

Most standard teaching methods in MBA education are welcomed by students with nearly the same attitudes and preferences. The main differences among students come from their understanding of the correlation between age and "choices of the most effective teaching methods to make up for a lack of ability." Where significance levels are higher, we find out that the age is the most sensitive of trainees' listed traits. Students' differences in age lead to different attitudes as to the expected results of various teaching methods. The second most influential factor to consider is job. Students with different jobs have different needs of improving their own abilities and capacities, and have different preferences for teaching methods. Industry factor is the third most influential factor that steers students' preferences for teaching methods, as in students with backgrounds in different industries prefer particular teaching methods.

Disciplinary background is normally considered a sensitive factor that leads to different attitudes and preferences towards teaching methods. However, the authors find in this study that it is not apparent in the survey carried out in marketing courses. Generally, for application-oriented courses such as marketing management, MBA students prefer more pragmatic teaching methods giving opportunities for discussion, such as analysis of cases, experimental simulation and group discussion. That is because such methods are easier to stimulate their enthusiasm and learning interest. Most students do not like report writing or study of propositions because these methods take up more time and energy.

Students from different classes have the same goal of professional knowledge acquisition, enriching themselves, and improving their ability to apply their skills. However, their preference for various teaching methods is obviously different ($15.5 > 14.0671$). After the significance level is improved, the results indicate that students in different types of classes will choose clearly different teaching methods. Students in weekend classes prefer intensive teaching, while those in crash courses want more diversified content, reflecting the fact that different students have different needs and expectations from their classers. Knowing their expectations can help curriculum developers adjust teaching methods and content to meet student needs. Only in this way will the goal of improving teaching quality be achieved.

The marketing management course has used a variety of systematic teaching methods. In terms of teaching content design and time allocation for the course, students had no other comments.

Suggestions

Although most of the cited teaching methods in the survey are effective and favored by some students, all students are found to be most interested in the analysis of cases and experimental simulations. Thus more varied teaching methods should be used in marketing training courses, especially relatively relaxed teaching methods and approaches with high involvement.

It is better to use different teaching methods based on each learner's personal traits including age, job, and industry background. This can provide some advice for structuring classes. Though there is no one teaching method fit for all, methods and content still should be designed to accommodate a majority of learners.

Students in different types of classes have varied backgrounds and their learning expectations vary case by case. Therefore, in order to select and design more appropriate teaching methods and content, surveys of learners' demands should be conducted before classes start.

In addition, although respondents of this survey are MBA students who participated in marketing management courses, and teaching methods used were mostly for marketing skill training, the research conclusion can provide beneficial references for teaching management and organization in other similar application-oriented courses.

References

Arbaugh, J. B. (2010). Sage, guide, both, or even more? An examination of instructor activity in online MBA courses. *Computers & Education*, *55*(3), 1234–1244. doi:10.1016/j.compedu.2010.05.020

Arbaugh, J. B. (2013). Does academic discipline moderate CoI-course outcomes relationships in online MBA courses? *The Internet and Higher Education*, *17*, 16–28. doi:10.1016/j.iheduc.2012.10.002

Bing, C. G. (2011). 中国 MBA 教育 20 年　经受市场规律检验的 20 年 [MBA education in China for 20 years being under the test of market rule for 20 years]. 中国新时代 [*China New Time*], (11), 90–91.

Chen, Z. X. (2005). 发展 MBA 教育与提高教学质量的若干问题探讨 [Discussion on development of MBA education and improvement of teaching quality]. 四川教育学院学报 [*Journal of Sichuan College of Education*], (5), 17–21.

Cheng, S. Q., & Han, F. (2012). On the innovative talents training mode of American business schools: Based on the MBA programs in four business schools. In M. Zhu (Ed.), *ICEEM 2012: 2012 2nd International Conference on Economic, Education and Management* (Vol. 1, pp. 500–504). Hong Kong, China: Hong Kong Education Society.

Ding, H., Huo, G. H., & Wang, M. T. (2012). 以市场适应性为驱动的石油院校 MBA 教育研究 [Research on the MBA education driven by the market adaptability in Petroleum University]. 中国石油大学胜利学院学报 [*Journal of Shengli College China University of Petroleum*], *26*(1),47–50.

Foster, T. N., & Farquharson, E. R. (2006). Assessment procedures for skills-based MBA courses adapted from the U.S. Army Reserve Officer Training Corps Leadership Development Program. *Negotiation Journal*, *27*(3), 367–386. doi: 10.1111/j.1571-9979.2011.00312.x

Huang, L. (2011). 国际化 MBA 教育问题和对策研究: MBA 国际认证—以广东外语外贸大学 MBA 项目为例 [Problem and Countermeasures of international MBA education: MBA

International Certificntion-based on MBA project in the Guangdong University of Foreign Studies]. 广东外语外贸大学学报 [*Journal of Guangdong University of Foreign Studies*], *22*(4), 96–100. doi: 10.3969/j.issn.1672-0962.2011.04.022

Jiao, S. L. (2009). 基于服务质量差距模型的 MBA 教育创新: 以清华大学 MBA 新版的变革为例 [Service Quality Gap Model on the MBA education innovation with gaps model of services qulity: Based on the new version of MBA in Tsinghua University]. 中国集体经济 [*China Collective Economy*], (28), 178–179.

Ministry of Education of the People's Republic of China, the National Development and Reform Commission, & the Ministry of Finance of the People's Republic of China. (2013). 关于深化研究生教育改革的意见 [Opinions *on deepening the reform of graduate education*]. Retrieved July 2, 2015, from http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/A22_zcwj/201307/154118.html

Keller, C, & Kros, J. (2000). Teaching communication in an MBA operations research/management science course. *Journal of the Operational Research Society*, *51*(12), 1433–1439. doi:10.1057/palgrave.jors.2601067

Krass, D., & Ovchinnikov, A. (2006). The University of Toronto's Rotman School of Management uses management science to create MBA study groups. *Interfaces*, *36*(2), 126–137. doi: 10.1287/inte.1050.0194

Li, Y. P., & Wu, S. T. (2009). MBA/EMBA 教育与我国企业家的培养 [The MBA/EMBA education and the cultivation of entrepreneurs in China.]. 学位与研究生教育 [*Academic Degrees & Graduate Education*], (6), 11–13.

Li, J., Xiao, Y. J., & Zhang, Z. J. (2002). 培养中国 MBA 核心竞争力 [Cultivate Chinese MBA core competitiveness]. 经理人 [*Manager*], (8), 96–97.

Ma, J. X. (2011). 在路上: 对话全国 MBA 教育指导委员会秘书长仝允桓 [On the road: Talk with Yunhuan Tong, the secretry of China National MBA Education Superoisory Committee]. 中国新时代 [*China New Time*], (11), 65–68.

Qian, Y. Y. (2010). 清华大学经管学院: 重视学生软技能教育 [Tsinghua SEM: Attach importance to Students' soft skills education]. 人力资源 [*Human Resources*], (1), 10–11.

Que, S. H. (2011). 南开 MBA 创新之路 [The innovative road of MBA education in Nankai]. 中国新时代 [*China New Time*], (11), 85–87.

Shi, F., Xia, J. S., & Chen, T. J. (2010). 基于科学发展的 MBA 教育项目特色培育探讨 [Discussion on the characteristics of MBA education progject based on the scientific development]. 高教与经济 [*Higher Education and Economy*], *23*(3), 58–62.

Sun, C. P., Liu, C., & Zhao, H. F. (2010). MBA 商务英语教学模式的创新与实践 [Innovation and practice of MBA business English teaching mode].合肥工业大学学报 (社会科学版) [*Journal of Hefei University of Technology (Social Sciences)*], *24*(6), 158–162.

Yi, L. (2003). 制约中国 MBA 教育发展的瓶颈 [Bottlenecks in the development of MBA education in China]. 优越生活 [*Better Life*], (3), 11–13.

Zhang, D. Y., & Zheng, B. B. (2001). 中国 MBA 教育质量控制系统探析 [Quality Control

System analysis on China's MBA Education]. 厦门大学学报 (哲学社会科学版) [*Journal of Xiamen University (Arts & Social Sciences)*], (2), 155–160.

Zheng, Y. X. (2007). MBA 教育质量控制与评价体系新探 [Analysis on the quality control and evaluation system of MBA education]. 高教发展与评估 [*Higher Education Development and Evaluation*], *23*(6), 16–21.

Zhou, W. H., & Gao, M. (2008). 学服务质量对学员满意影响的实证研究-以 MBA 教学为例 [Empirical research on students satisfaction impacted by teaching service quality-based MBA teaching]. 湖南财经高等专科学校学报 [*Journal of Hunan Finance and Economics University*], *24*(1), 135–137.