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Research on the Quality of Undergraduate Programs of Universities in Chongqing: From the Perspective of Students' Satisfaction

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Abstract
The reform of universities contributed remarkably to the development of China's higher education. Contrastively, problems pertaining to their teaching quality have aroused much attention and anxiety from the society in the meantime. After defining the 'satisfaction of teaching quality', this research analyzes samples consisting of college students. On this basis, this thesis studies students' satisfaction of teaching in universities in Chongqing from the following five dimensions – curriculum, in-class teaching, professional training, teaching facilities and management. It is concluded that at present, specialty-curriculum plan and professional training are the two factors discouraging students' satisfaction of the quality of undergraduate programs. Besides, the factor of grade has a marked influence on students' satisfaction, as students of lower grades are more satisfied with their teaching quality than those of higher grades. At last, there is no stark difference in terms of students' satisfaction in different universities and they are relatively satisfied with the quality of undergraduate programs in general.

Key words: Institutions of higher education; Students' satisfaction; Quality of undergraduate programs

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INTRODUCTION
According to the *Outline of National Medium-and-Long-Term Program for Educational Reform and Development*, the goal of China's higher education is to improve the quality of higher education in an all-round manner and to enhance that of personnel cultivation. Meanwhile, Chinese government will continue to implement the Project of Reforming the Teaching Quality and Pedagogy of Undergraduate Programs. This will be taken as a fundamental strategy to improve the quality of China's higher education. Against the backdrop of a mass higher education, it is argued that the quality of higher education is degrading, and hence the call for an amelioration of the situation. The quality of higher education is of crucial importance to higher education; furthermore, the quality of undergraduate programs is the essence of that of higher education (Xu, 2008). At present, many studies concentrate on the quality of higher education, but few of them showed expertise in the quality of undergraduate programs and fewer in a systematic study in this field. It is likely that the study of the former appears to shadow the importance of the latter.

Quality is the sum of specialties which reflects the ability of an object (a product, process or an activity, etc.) to meet explicit or implicit demands (Wu, 1996). The quality of undergraduate programs refers to a collection of features that undergraduate education programs are able to satisfy explicit and implicit demands of different subjects. The quality is ultimately presented by degrees to which subjects' needs are fed. Obviously, different subjects understand the quality in different ways. On the basis of student's perspective, my research will focus on students' satisfaction of the teaching quality of higher education institutions in China. This would prove to be an important way to monitor the teaching quality of higher education institutions and the standard of personnel training. It is of great theoretical and

practical significance for improving the mode and level of teaching. Therefore, in terms of textbooks, teaching content, teaching methods and teaching environment, etc., this research selected relevant variables to establish a comprehensive evaluation system; besides, from a perspective integrating the quality of in-class and practical teachings with that of autonomous learning, I also investigate the formation mechanism of students' satisfaction of the quality of undergraduate programs and construct a research model for students' satisfaction. Involving undergraduates in Chongqing, this research analyzed factors that influence students' satisfaction with the quality of undergraduate programs. Hence, conclusions drawn from the study can provide theoretical support and reference to enhance the quality of undergraduate programs and promote personnel cultivation.

1. LITERATURE REVIEW AND THEORETICAL BACKGROUND

The theoretical basis of studies on students' satisfaction originates from customer satisfaction, while its basis in reality derives from the transformation of students' role. In 1966, American Council on Education carried out the first research on students' satisfaction through CIRP (Cooperative Institutional Research Program). In late 1990s, the notion of customer satisfaction was introduced into China. Furthermore, with the reform of higher education in China, students' status has been ascended continuously; accordingly, the study of students' satisfaction has gradually drawn increasing attention from scholars. In terms of college students' satisfaction, the present literature in China mainly focuses on qualitative study attaching importance to humanistic care over students, yet few are done by quantitative approach. Moreover, only a handful of them are of reference value, among which Tian Xizhou and Wang Xiaoman investigated college students' satisfaction (Tian & Wang, 2007); Oyang and He studied students' appraisal of the service of higher education institutions empirically (Oyang et al., 2008). These are notable studies done by empirical approach in China. However, they only managed to investigate students' satisfaction with the quality of higher education or the service of higher education institutions in a general way. There is still a short of specific and in-depth investigation and analysis of the teaching quality of undergraduate education. Given these, it is of vital theoretical and practical significance to study the teaching quality of undergraduate programs on the basis of students' satisfaction.

Classical satisfaction is a cause-effect model comprised of structural variables like customer expectation, quality perception, value perception, customer satisfaction, customer complaint, etc.. Among these variables, customer satisfaction is the target variable; customer expectation, quality perception and value perception are antecedent variables to customer satisfaction; and customer complaint and loyalty are outcome variables to customer satisfaction. To be specific, customer expectation refers to quality estimation made by a customer before using or purchasing one product or service. In addition, the perceived quality of customer means the actual experience of a customer after using one product or service, including customers' perception of the degree to which the product is of high quality, reliable and compatible to their needs. Customers' perceived value refers to customers' perception of products' quality at given prices vice versa. And customer satisfaction encompasses the gap between their expected quality and actual feeling of a product or service, that between their actual feeling and their idealized products and customers' general satisfaction. This model is specialized in analyzing how customer expectation, quality perception and value perception affect customer satisfaction and loyalty. Hence, it is widely employed in service industry to investigate customer satisfaction. In accordance with the classical satisfaction model, students' satisfaction of the teaching quality of their undergraduate programs should cover their satisfaction with specialty and curriculum, in-class teaching, professional training, teaching facilities and management, etc..

2. RESEARCH DESIGN

To avoid an over-generalized understanding of teaching quality and to ensure the pertinence of the research, teaching quality was redefined as the sum of provided teaching standards and conditions able to meet students' needs in specific teaching situations. It embodies the following 5 structural indicators: a) specialty and curriculum, b) in-class teaching, c) professional training, d) teaching facilities, and e) teaching management. This research, through the analysis of the above indicators, will adopt closed questions, so as to make a questionnaire about students' satisfaction with undergraduate programs. In order to guarantee the accuracy and inclusiveness of each index, the author, by way of Delphi Method, consulted experts and scholars from Southwest University and Chongqing University for the constitution of single indexes (see Table 1). Meanwhile, the questionnaire applied Likert scale for scoring; and each single index is divided into five ordered response levels: unsatisfied (score 1), relatively unsatisfied (score 2), neutral (score 3), relatively satisfied (score 4) and satisfied (score 5).

Table 1
Indicators of College Students' Satisfaction With the Teaching Quality of Undergraduate Programs

	Structure indicators	
College students' satisfaction with the teaching quality of undergraduate programs	Specialty and curriculum	Rationality of specialty; formulation of teaching plans; current curriculum and teaching plans; quality of textbooks
	In-class teaching	Teaching content; teacher's attitude; teaching methods; students' in-class performance; student-teacher interactions
	Professional training	Content and arrangement of professional training; facilities and bases available; improvement of students' mastering of expertise and practical skills
	Teaching facilities	Campus; classrooms; library; computer and language labs; sports facilities
	Teaching Management	System of teaching management and service; teaching reform; establishment and execution of the rules and regulations of teaching; supervision over teaching quality

Having the questionnaire as investigation tool, this research was conducted from December, 2013 to April, 2014 in 3 universities at 3 different layers (Project "985", Project "211" and provincial university respectively) in Chongqing. 600 questionnaires were handed out at random and anonymously (200 for each university). Among the 576 questionnaires collected back, 531 of them were valid, with a recovery rate of 96% and an effective return ratio of 88.5%. For the convenience of data analysis, this research applied spss20.0 for the input and statistical processing of data. For basic information, see Table 2.

Table 2
Basic Information of Research Samples

Types		Frequency	Percentage	Effective percentage	Cumulative percentage
Gender	Male	295	55.6	55.6	55.6
	Female	236	44.4	44.4	100.0
Grade	1st	123	23.2	23.2	23.2
	2nd	139	26.2	26.2	49.4
	3rd	147	27.7	27.7	77.1
	4th	122	22.9	22.9	100.0
Type of university	Project "211"	194	36.5	36.5	36.5
	Project "985"	187	35.2	35.2	71.7
	Provincial	150	28.2	28.2	100.0

3. DATA PROCESSING AND RESULTS

3.1 Satisfaction With Single Indexes

In order to process all single indexes about students' satisfaction with undergraduate programs, spss20.0 was used to calculate the average and the standard deviation of it, with averages in an incremental sequence. Results are showed in Table 3.

Table 3
Scores of Single Indexes

Single indexes (satisfaction with…)	Average	Standard deviation
Classroom resources	3.60	1.062
Library resources	3.90	.964
Laboratorial resources	3.26	1.123
Teachers' cultivation	3.47	.985
Teachers' attitude	3.54	1.002
Teaching approaches	3.12	.912
Teaching effect	3.23	.910
Effect of management	3.21	.913
Managerial methods	3.01	1.012
Public selective courses	3.10	1.134
Experimental courses	3.12	.981
Administrant	3.11	1.053
Administrative system	3.01	1.073
Selective courses pertaining to certain major	3.02	1.056
Base for professional training	2.92	1.023
Structure of curriculum	2.90	1.031
Compulsory courses pertaining to certain major	2.94	1.053
Internship	2.76	1.032
Social activities	2.75	1.053

As is depicted in Table 3, the top 5 single indexes are: library resources, classroom resources, teachers' attitude, teachers' cultivation and laboratorial resources, all scored between 3 to 4. This indicates students are relatively satisfied with these indexes. The least-scored 5 indexes are compulsory courses pertaining to certain major, structure of curriculum, bases for professional training, internship and social activities, which are scored between 2 to 3. This indicates that students are relatively unsatisfied with these respects. The result of single indexes is in line with the status quo of the development of higher education in China. In recent years, the expanded scale of China's higher education is accompanied with a great improvement of infrastructure in higher education institutions. Thanks to large sums of investment in infrastructure, resources of libraries, classroom and laboratories in these institutions are enriched to a large extent. In the meantime, social values have become more diverse than before as a result of social transformation. This stimulates college teachers to attach more importance to the integration of knowledge and humanity in their teaching. Both students' academic performance and extracurricular capabilities are emphasized. Thus, students tend to have a higher level of satisfaction with their in-class teaching. Nevertheless, it is notable that students' professional competence has always been a weak point of China' higher education. The situation becomes worse after the expansion of college enrollment. Accordingly, China's higher education institutions will confront bigger challenges when organizing professional training and internships. Hence, the quality of professional training in universities is more difficult to be ensured. It is proved again in this research that this weak point is still a bottleneck in improving the quality of undergraduate education in China.

3.2 Satisfaction With Structural Indexes

The results of processing structural indexes are seen in Table 4. From Table 4, it is evident that among the 5 indexes, teaching facilities is ranked the highest, but professional training the lowest. Furthermore, the latter is scored "relatively unsatisfied". The results are in line with the scoring of single indexes, proving the data is relatively accurate and reliable. However, this also reveals the drawbacks of China's higher education. For instance, specialty and curriculum are ranked the last but 2. To some extent, this score is connected with the structural unemployment of college students in China. Through the interviews, the author discovered that many college students criticized the low relevance between their majors and curriculum and the demand of market, as the former is thought as of little practical value. This also displays students' dissatisfaction with their major and curriculum, indirectly.

Table 4
Scores of Structure Indexes

Types		In-class teaching	Professional training	Teaching facilities	Teaching management	Specialty and curricula
N		531	531	531	531	531
	Effective missing	0	0	0	0	0
Average		3.3565	2.9032	3.4890	3.1345	3.0132

3.3 Influence of Project Types on Students' Satisfaction With Structural Indexes

Project types in this research are categorized genders, grades, and types of universities. In order to further judge the effect of each project type on students' satisfaction with structural indexes, the author conducted Independent-Sample T Test on students' satisfaction with each structural index from the perspective of gender, and one-way ANOVA in terms of grades and types of universities.

3.3.1 Effect of Gender on Structural Indexes

Table 5 shows that male and female students have similar satisfactory standard toward each structural indexof a prominent level of 0.05. Among the 5 indexes, gender only exerts bigger influence on satisfaction with teaching management, with a prominence probability of 0.043. The phenomenon implies that gender can result in differences in students' comment on teaching management in universities; and female students are more satisfied with it than their male counterparts. This may be connected with the general difference between characters of male and female students. Contrastively, female students are relatively more likely to accept administration and regulations from universities.

Table 5
Influence of Gender on Structural Indexes

Structural indexes	Gender	*N*	Average	Standard deviation	*T*	Prominence
Specialty and curriculum	Male	295	3.0124	.84031	-.008	.995
	Female	236	3.0131	.77152		
In-class teaching	Male	295	3.3205	.75587	-1.523	.128
	Female	236	3.4056	.75332		
Professional training	Male	295	2.9063	.77751	-.372	.709
	Female	236	2.9280	.79056		

To be continued

Continued

Structural indexes	Gender	*N*	Average	Standard deviation	*T*	Prominence
Teaching facilities	Male	295	3.4715	.77190	-1.142	.252
	Female	236	3.5369	.75862		
Teaching management	Male	295	3.0861	.83892	-2.052	.043
	Female	236	3.2123	.80534		

3.3.2 Influence of Grade on Students' Satisfaction With Structural Indexes

In Table 6, it is noticed that grade has a considerable influence on students' satisfaction with structural indexes, except for teaching facilities. In terms of specialty and curriculum, students in grade 1 and 2 are more content with it than those in grade 3 (that is, 1>3, 2>3); in light of in-class teaching, students in grade 1 are more content than those in grade 3 and 4 (that is, 1>3, 1>4), and students in grade 2 are also more satisfied than those grade 4 (that is, 2>4); in terms of professional training, students in the 1st grade are more satisfied than those in the 3rd and 4th grade (that is, 1>3, 1>4); in terms of teaching management, students in grade 1, 2 and 4 are more content than students in grade 3 (that is, 1>3, 2>3, 4>3). The result indicates that there is disparity among students in different grades when evaluating specialty and curriculum, in-class teaching, professional training and teaching management.

Table 6
Influence of Grade on Structural Indexes

Structural indexes	Grade	*N*	Average	Standard deviation	Homogeneity of variance	Probability of *F* value	Difference in detail
Specialty and curriculum	1	123	3.1025	.81163	.429	.044	1>3 2>3
	2	139	3.0529	.77749			
	3	147	2.8678	.77915			
	4	122	3.0218	.87364			
In-class teaching	1	123	3.4982	.77328	.730	.002	1>3 1>4 2>4
	2	139	3.4186	.76695			
	3	147	3.2796	.70822			
	4	122	3.2267	.74617			
Professional training	1	123	3.0864	.70002	.126	.006	1>3 1>4
	2	139	2.9296	.84581			
	3	147	2.7954	.76208			
	4	122	2.8674	.76440			
Teaching facilities	1	123	3.6314	.73310	.071	.061	No big difference
	2	139	3.4534	.81875			
	3	147	3.4218	.70806			
	4	122	3.5148	.77175			
Teaching management	1	123	3.2547	.80194	.875	.007	1>3 2>3 4>3
	2	139	3.1796	.81472			
	3	147	2.9572	.81039			
	4	122	3.1570	.85859			

3.3.3 Influence of the Types of University on Structural Indexes

As is shown in Table 7, though homogeneity test of variance has proved that it is proper to have multiple comparison of students' satisfaction from the perspective of types of universities, the influence of it on students' satisfaction with structural indexes is insignificant, as the prominence probabilities in all 5 dimensions are larger than 0.05. Therefore,

Table 7
Influence of Types of Universities on Structural Indexes

Structural indexes	Type of universities	*N*	Average	Standard deviation	Homogeneity of variance	Probability of *F* value
Specialty and curriculum	Project "211"	194	3.0187	.79725	.999	.672
	Project "985"	187	2.9775	.82973		
	Provincial	150	3.0411	.81067		
In-class teaching	Project "211"	194	3.3874	.73669	.132	.512
	Project "985"	187	3.3124	.72995		
	Provincial	150	3.3669	.79883		

To be continued

Continued

Structural indexes	Type of universities	*N*	Average	Standard deviation	Homogeneity of variance	Probability of *F* value
Professional training	Project "211"	194	2.9687	.75991	.854	.150
	Project "985"	187	2.8398	.78884		
	Provincial	150	2.9420	.79413		
Teaching facilities	Project "211"	194	3.5083	.76769	.667	.209
	Project "985"	187	3.4345	.75820		
	Provincial	150	3.5541	.77263		
Teaching management	Project "211"	194	3.1551	.84531	.302	.309
	Project "985"	187	3.0751	.84479		
	Provincial	150	3.1840	.79002		

3.3.4 Students' Satisfaction With the Quality of Undergraduate Programs in General

After addressing 531 samples, the average score of students' overall satisfaction with the quality of undergraduate programs is 3.19. Therefore, students are relatively content with it. But this also suggests there is a large room to improve the current situation and a lot of work remains to be done. Besides, the result is out of line with the primary speculations of those who claimed the quality of China's higher education has slid. This means we cannot simply replace the judgment of undergraduate programs with that of higher education; on top of this, we cannot blindly claim that the quality of China's higher education is going downward without any thorough academic study. In fact there has existed a long-term debate over this issue in China (Liu & Ye, 2003).

CONCLUSION

On the basis of empirical investigation, this research deals with students' satisfaction with the teaching quality of undergraduate programs by data processing and statistical analysis. Through the above analysis, it is safe to come to the following conclusions:

A. The research shows that major and curricula and practical teaching are the 2 factors degrading the quality of students' satisfaction with undergraduate programs. Therefore, the first priority is to readjust the structure of specialty and curriculum for undergraduate programs, so as to improve the quality of practical teaching.

B. The research indicates that grade is an important factor affecting students' satisfaction and students in lower grades are more content with the quality of undergraduate education. So it is advisable to further supervise the teaching quality in higher grades so as to enhance it.

C. Students' satisfaction with the quality of undergraduate programs varies little among universities in different layers. Generally, students feel relatively satisfied with the quality of undergraduate programs.

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