

Research on College Students' Cognition of the Value of General Education Courses*

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Abstract—As the subject of general education, students' cognition of the value of general education courses affects the implementation effect of general education. This study investigates the cognition of general education courses of students in H University and has the following findings: although students' overall satisfaction with the general education courses is high, their cognition of their value is insufficient; freshmen have higher cognition of the value of general education courses than sophomores; students' overall academic performance is significantly correlated with their general education performance; girls are significantly better than boys in terms of performances in general education courses. Through analysis of the reasons, it is found that there are both internal factors of students and external factors. Finally, some suggestions are put forward for H University to enhance students' cognition of the value of general education courses.

Keywords—college students; general education courses; value cognition; research

I. INTRODUCTION

Since the 21st century, general education has become one of the hotspots of higher education reform in China. However, general education is generally confronted with an embarrassing situation in China, which is distorted in practice without satisfying effect [1].

Therefore, it is very important and urgent to study the value cognition of general education courses. In the research system of course value of general education, students are the cognitive subjects of course value, and their cognition of the value of general education courses is directly related to the implementation effect, which is related to the ultimate realization of course value. Therefore, this study focuses on which factors affecting students' cognition of general education courses. This paper takes students of H University as the survey object, and uses the methods of questionnaire and interview to investigate students' cognition of the value of general education courses, and analyzes the factors that affect students' cognition of it.

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II. RESEARCH OBJECT AND METHOD

The object of this study is the undergraduates in comprehensive classes of H University. The respondents of the questionnaire are students of grade 2012 and 2013 in the comprehensive class. Two arts classes and two science classes respectively in each grade, which are 8 classes all together, are included. Because the comprehensive class adopts small-class teaching, each class has about 25 students, and there are 196 students in 8 comprehensive classes. Since the number of respondents in this survey is not large, a saturated survey is adopted to conduct a questionnaire survey on all students in comprehensive classes of general education courses, in hope to truly reflect the views of students as a whole. Apart from some students who asked for leave due to illness and other reasons, a total of 192 questionnaires were distributed and 190 questionnaires were recovered. The questionnaire recovery rate was 98.96%, with 188 valid questionnaires. The specific questionnaire respondents can be seen from "Table I".

A total of 17 students from comprehensive classes were selected for this study. The selection of survey objects took into account the distribution of grades, the type and characteristics of comprehensive arts and science classes, gender and other factors. In terms of grades distribution, considering that the original comprehensive class of 2012 had received two full years of general education, and the comprehensive class of 2013 had received nearly two years of general education and students should have more knowledge of general education courses, relatively more students were chosen from the two grades, with 7 students of 2012 and 6 of 2013 being selected. The grade of 2014 had received nearly one year of general education and 4 students were selected from it. In terms of category, considering that there are comprehensive classes of arts and comprehensive classes of science, efforts was made to make each class have student chosen. In terms of gender, 15 girls and 2 boys were selected in the comprehensive class, since there are far more girls than boys. The 17 students surveyed were coded and represented by letters J to Z.

TABLE I. QUESTIONNAIRE SURVEY: BASIC INFORMATION OF STUDENTS

Gender	Category	Female		Male	
	Number of people	162		26	
	Percentage (%)	86.2%		13.8%	
College	Category	School of Physics & Telecommunication Engineering	School of Chemistry & Environment	School of Liberal Arts	School of Economics & Management
	Number of people	51	46	46	45
	Percentage (%)	27.1%	24.5%	24.5%	23.9%
Grade	Category	Fresh year		Sophomore year	
	Number of people	90		98	
	Percentage (%)	47.9%		52.1%	
Performance in general education courses	Category	low grade	medium grade	high grade	
	Number of people	16	140	30	
	Percentage (%)	8.5%	74.5%	16.0	
Overall performance	Category	low grade	medium grade	high grade	
	Number of people	40	110	35	
	Percentage (%)	21.3%	58.5%	18.6%	

Questionnaire and interview were used in this study. Through a questionnaire survey, students are asked whether they have a clear understanding of the value of the general education course and the importance of the objectives of the general education course. From the perspective of the value orientation of course objectives, course objectives are the reflection of course value, so students' value cognition of general education courses can be reflected through the cognition of course objectives. Therefore, based on the objectives decomposition of the general education courses, combined with Bloom's Taxonomy and the evaluation of the general education objectives by Chinese scholar Li Manli, the questionnaire design divides the objectives of objectives into three aspects: knowledge, ability and quality. Knowledge is mainly in the fields of mathematics and natural sciences, social sciences and humanities; abilities include critical thinking ability, value judgment ability, expression and communication ability, aesthetic ability, and the ability of information integration and acquisition; quality mainly refers to moral and social responsibility. Combined with research questions and centering on the course objectives of general education courses, 30 questions are designed in this questionnaire on students' cognition of the value of general education courses, and their satisfaction with the general education courses they took are investigated.

III. RESEARCH RESULTS

Through the questionnaire survey, the internal consistency of the questionnaire was tested and the reliability of the questionnaire was checked. Upon examination, the reliability index of the questionnaire is 0.982, which indicates that the reliability of the questionnaire is very good. (If the coefficient is below 0.6, internal reliability is generally considered insufficient; when it reaches 0.7-0.8, the questionnaire has a good reliability, and when it reaches 0.8-0.9, the questionnaire has a very good reliability.) The results of the questionnaire survey show that there is no significant difference in the cognition of the value of general education among students in different colleges, with different total scores and general education scores. The following aspects, however, deserve attention.

A. Students' Overall Cognition of the Value of General Education Courses

The result shows that the overall average of 188 students' cognition of the value of general education courses is 2.9982. According to Likert scale, each item was divided into "strongly agree", "strongly agree", "uncertain", "strongly disagree" and "strongly disagree", with values of 5, 4, 3, 2 and 1, respectively. According to the result, the overall mean value is 2.9982, indicating that students' overall cognition of the value of general education courses is at an uncertain level (as can be seen from "Table II"). This is also reflected in the interview with students, taking the following as for examples.

TABLE II. STUDENTS' OVERALL COGNITION OF THE VALUE OF GENERAL EDUCATION COURSES

	N	mean value	standard deviation	variance
mean	188	2.9982	.91280	.833
Valid N (list state)	188			

Student P said, "To receive general education is to learn a little bit of everything, but nothing excellent, namely, having extensive but not profound knowledge." (P04)

Student Q said, "I think maybe other people or other majors (like normal majors) will think it's amazing that we receive general education courses. However, in my opinion, the so-called general education has not achieved its essential purpose. Because the school arranges us to attend the courses of other colleges, but after those courses, we will not pay much attention to them since they are not provided by our own colleges and just muddle along, so we will not learn anything or learn deeply." (Q01)

It can be seen that students' cognition of the value of general education courses is not high on the whole, although there are individual differences among students. However, on the whole, the students thought that they have small gains and could not be certain about the gains, which was consistent with the survey results.

B. Students' Recognition of the Value of General Education Courses in Different Grades

By comparing the questionnaire results of freshmen and sophomores on their cognition of the value of general

education objectives, it can be seen whether there is any difference between them.

TABLE III. VARIANCE ANALYSIS OF STUDENTS' VALUE COGNITION OF GENERAL EDUCATION COURSES IN DIFFERENT GRADES

		quadratic sum	df	mean square	F	Significant
mean * a3	Inter-group (combination)	89.707	1	89.707	252.426	.000
	Intra-group	66.101	186	.355		
	Total	155.808	187			

The variance analysis results in "Table III" show that there is a significant difference in the cognition of general courses between different grades, because the significance value is less than 0.05. Combined with the mean value, the mean value of freshmen's value cognition of general education courses is 3.72, which is significantly higher than the mean value of sophomores, which is 2.34. Meanwhile, the interview results also reflect the differences between freshmen and sophomores, for example:

Student R thinks that "When I was in my freshman year I felt them interesting and more serious and of higher quality compared with public elective course. I took two versions of the same course, namely, the general education version and the public elective version. And the general education course seemed like the enhanced version of public elective course, by and large. In terms of the effect, we were much more serious about the course than those took the public elective course. The teacher was more attentive in teaching than the one teaching the public elective course and students are also more concentrated than public elective courses.

Student J thinks that "some teachers requires scene performances in their general education courses, so the teaching mode will be very novel and quite challenging; and since we come from the college entrance examination before which our mind have been imprisoned; in addition, it was in the first semester of the first year so we felt it cool and had a striking impression of it." (J08)

C. Students' Overall Satisfaction with General Education Courses

According to the five-point scale (Likert scale), the satisfaction of each course is divided into: "very satisfied", "relatively satisfied", "satisfied", "relatively dissatisfied" and "very dissatisfied", and assigned the values of 5, 4, 3, 2 and 1 respectively. On the whole, the measured results show that the average value of students' overall satisfaction with the 24 general education courses is 4.07, indicating that students' overall satisfaction with general education courses is relatively high. This is also reflected in the interview.

Student P said, "I think most of the classes are pretty good." (P08)

Student L said, "I think maybe my teacher is so good that I'm not really interested in my philosophy teacher, but my classmates that take other courses all show full attendance in addition to philosophy course." (L12)

According to the answers of the students, it can be seen that the results of the interview are consistent with the results of the questionnaire, namely the students are generally satisfied with the general education courses.

There are significant differences in the general education scores of students of different genders.

This is a statistical analysis of students' general education scores as a continuous variable. The purpose of the analysis is to find out whether there is a difference between boys and girls. The variance analysis results in "Table IV" show that there is a significant difference in the results of general education courses between different genders. The survey results showed that the significance value of the difference between groups was $0.015 < 0.05$. And combined with the mean value, the mean value of female students which is 2.02 is more than the mean value of male students that is 1.69, so the general education score of female students was significantly better than that of male students.

TABLE IV. VARIANCE ANALYSIS OF GENERAL EDUCATION SCORES OF MALE AND FEMALE STUDENTS

	quadratic sum	df	mean square	F	Significant
inter-group	2.383	1	2.383	6.017	.015
Intra-group	72.482	183	.396		
total	74.865	184			

It is not clear from the interview that the girls' general education scores are better than the boys', though. However, the difference between male and female students can be seen from the boys' answers, for example:

A male student Q said, "This is an individual thing. It is not about accumulating experience in playing games and I think general education has nothing to do with major." (Q08)

Another male student S thinks, "Sometimes it is beneficial, but sometimes not. Sometimes I listen carefully to what the teacher is saying if it's interesting, and sometimes I don't think it's useful if it's boring." (S02)

Therefore, male students are more inclined to play games and attach more importance to their majors.

IV. RESULT ANALYSIS

The results of questionnaire and interview are analyzed to analyze the reasons for these results.

A. *Analysis on the Causes of Students' Insufficient Overall Cognition of the Value of General Courses*

1) *The impact of professional courses and future employment on students:* It can be seen from the interviews with students that students attach great importance to the professional courses. When there is a conflict between the general courses and the professional basic courses, students usually give up the general courses and choose the professional basic course. It can be seen that the status of the professional courses is higher than that of the general courses in the eyes of students. Students attach great importance to courses due to the pressure of future employment orientation. From the students' point of view, only by learning specialized courses well can they find a better job in the future. Qian Ying blames this on short-term utilitarianism. Such short-term utilitarianism not only exists among students, but also exists in the overall social environment [2].

2) *The influence of general education teachers on students:* Students' cognition of the value of general education courses is influenced by the teachers, since teachers are the direct driving force of general education. Students' recognition of the value of general education courses is gradually deepened in every general education class. However, according to the interviews with students, although the teachers of general education in the comprehensive class are selected from various schools, their cognition of general education is quite different. Some teachers have studied general education; some teachers have only vague cognition; and some teachers even don't know much about it at all. Several students said that little did the teachers say in class about the purpose of the general education course and what the students were expected to achieve. As teachers are not clear about the concept and objective of general education, they cannot always implement the concept of general education in terms of course content selection, teaching organization, teaching evaluation, etc., and cannot organize classroom teaching around the objective, and thus will ultimately fail to reach the expected goal, affecting students' cognition of the value of general education courses.

3) *The impact of general education management on students:* The administrators of general education are the policy makers, promoters and managers of school general education reform. Therefore, the cognition and action of administrators on general education will affect students' cognition of the value of general education courses. The administrators of general education of the comprehensive class include the leaders of the university, leaders in the academic affairs office and the managers in the level of teachers and colleges. The general education ideas, policies and systems, and the way of management formed by these managers' cognition and understanding of general education, will have an important impact on students. As students T said, "for example, we would feel that there is no one in

charge of us in the college, and that we are not the real children of the college itself. The academic affairs office sometimes manages affairs of us, but I don't have any deep feelings." (T13) But in practice, the academic affairs office of the university has only one teacher in charge, and this teacher is also responsible for other clerical work. From the perspective of management procedures, after students enter the school, there is no teacher to interpret the training plan for students in detail, which also leads to students' poor understanding of why general education courses are set up. In addition, students also reported that they had too few opportunities to meet with teachers and lacked communication.

4) *The influence of general education courses on students:* In terms of the courses, some students think that the general pedagogy is very extensive yet the depth of course learning is not enough. The connection between courses is not close enough, which also reflects that the interdisciplinary nature between courses is not obvious and needs to be improved. The general education course is not to learn everything but just generally, which violates the original intention of general education. Therefore, it is necessary to set up rigorous and pithy general education courses. And attention should be paid to the integration of general education courses. In addition, there is another problem. Students think that they have low or even little optionality of the general education courses in comprehensive class and they take the courses according to the class schedule. Student X said, "There is really no autonomy in the selection of general education courses." (X03) The reason for students' low optionality of courses is that schools do not offer enough courses as some courses are too expensive, or there are no suitable teachers. However, it is of great significance for students to choose courses independently. Selection is value-oriented and students' low optionality of courses will affect their cognition of the value of general courses.

In addition to the above effects, senior students also have an impact on junior students' cognition of the value of general education courses. The new students will learn about the general education courses from their senior students, and the influence of senior students on the freshmen is huge.

B. *Freshmen Have Higher Cognition of the Value of General Education Courses Than Sophomores*

Why is it so? This can be better understood by combining comprehensive analysis of internal and external factors of students.

1) *Influence of students' cognitive development characteristics:* It should have a lot to do with the characteristics of college students' cognitive development. William G. Perry was a psychologist who studied the cognitive development of college students relatively early. On the basis of Piaget's cognitive structure theory, Perry conducted an empirical study on the cognitive development

of college students. Through his open research on student development at Harvard University, he eventually formed his own theory on the cognitive development of college students. He focused on how students move from a universal dualism to relativism and how commitment can be developed in a relativist world. He divided students' cognitive development into three levels and nine stages. Level one is the stage of dualism thinking. The mode of dualism thinking is dualistic, that is, there is only right or wrong, black or white, good or bad, etc., and uncertainty is not accepted. When college students are in the mode of dualism thinking, teachers exist as authorities whose majesty is not doubted. The teacher as the authority is mainly to teach students the correct answers, in the process of which hard work and obedience will be rewarded, while questioning the authority is considered wrong. The second level is the thinking mode of relativism. At this stage, absolute right and wrong views are changed and knowledge is uncertain, which is only valid in a certain context. Level three is commitment. Commitment is a process involving the development of individual morality, and it is a process from low level to high level [3]. When college students' cognition of the value of general education courses is seen from the perspective of Perry's theory, it is justified that students of different grades have different cognition of the value of general education courses under the influence of their own cognitive development characteristics. As freshmen are still in the stage of dualism thinking, their cognition of the value of general education courses will be influenced by the authoritative introduction of teachers, head teachers or relevant staff who will inform them of the important value of general education courses, so students are more likely to believe and obey them. As time goes on, students' cognitive level will increase, and their cognitive level will enter into relativism or a higher level of commitment when they will treat the value of general education in a discriminating way. And in this process, their cognition is always influenced by social culture, parents, other teachers and classmates around them. In particular, the external atmosphere of professional development and future employment will make them constantly re-examine the value of general education courses, thus they do not know enough about the value of general education courses. As a result, freshmen have an unlikely higher awareness of the value of general education courses than sophomore students.

2) *Influence of the thought-stifling teaching mode in high school:* The other reason can be seen from what some freshmen said in the interviews. Some freshmen think that students' thought has been imprisoned by the curriculum in high school until entering college, where the general education courses emphasizes situational dialogue and group work. This teaching method of continuous thinking breaks through the way of high school, which is novel and interesting, and students will feel more fruitful. However, as there are more general education courses to be taken, the learning attitudes of some students have been different in

the second year. As the course are fuller, students are unwilling to have deep discussions and some group work begin to be mainly completed by the group leader and some individual members, with others participating in name only. With the frequency of such things, students feel that there is not much to gain; therefore the value of the course will be reduced.

C. Students Have Higher Overall Satisfaction with General Education Courses

Students' overall satisfaction with general courses reaches 4.07, indicating that their overall satisfaction with general courses was relatively high. Why do students have higher satisfaction with general courses but lower recognition of the value of general courses? The reason here might be that the school pays much attention to the comprehensive classes as innovative experimental classes, and selects teachers with higher teaching level in each college for the teaching work of general education, which ensures the teaching quality of general education. The vast majority of these teachers are conscientious enough to make a good general education course. Some teachers have invited well-known professors from other universities to give lectures to students; some have made their graduate students course assistants to help to answer students' questions. In interviews with students, it has been reported many times that some teachers are very responsible. This shows that the school is rigorous in the selection of teachers. However, there is a phenomenon that teachers have different cognition and attitude towards general education. And the attitude of teachers will affect students' cognition of the value of general education. Some researchers have pointed out that teachers' attitude towards general education also directly influences students' perception of the value of general education [4]. This can also be found in the students' answers to the semi-structured questions about general education. Many students believe that general education courses should be more systematic, more continuous, more closely related to practice, and more closely related to various subjects, and efforts need to be especially intensified to cultivate students' thinking ability. It can be seen that although students think that the general education courses have a higher overall satisfaction, they still think that the value cognition of the general education courses needs further improvement.

D. There Is a Significant Difference Between the Performances of Male and Female Students in General Education Courses

The results show that girls' general education scores are significantly better than boys'. The reasons for this are as follows. First, the number of female students in comprehensive class is significantly higher than that of male students. The number of female students in the test was 162, accounting for 86.17% of the total number, while the number of male students was only 26, accounting for only 13.83% of the total number. Usually some classes have only a few boys, and some classes are even full of girls. As comprehensive talent training experimental classes, students' learning enthusiasm is relatively high on the whole; especially the

degree of diligence of girls may be higher than that of boys. Second, from the perspective of general courses offered for students, most of them are in the fields of humanities and social sciences, while there are few courses in mathematics and natural sciences. Female students tend to have more interest in language and liberal arts courses, while boys are better at reasoning and logical thinking than girls, which also interest them more. However, it can be seen from students' response to their expectations of general education courses that the curriculum setting and teaching organization are relatively deficient in cultivating students' logical thinking ability and thus cannot meet the value requirements of students' expectations.

V. CONCLUSION AND SUGGESTIONS

The purpose of studying students' cognition of the value of general education courses is to promote the reform of general education. Based on the above analysis, if H University is to enhance students' cognition of the value of general education courses and better promote the reform of general education, it needs to make efforts in the following aspects.

A. Strengthening the Publicity of General Education for New Students

General education is a new thing for most freshmen in comprehensive classes. According to the interviews, students lack the cognition of general education when they first enter comprehensive class. Many students are unclear about the purpose of setting up general education courses. Therefore, it is necessary to make clear to the students that general education is the necessary requirement to cultivate innovative talents in the entrance education on the one hand. Such qualities as broad vision, independent thinking, rich imagination, strong sense of mission and broad mind, etc. which creative talents must possess can only be brought up on the solid foundation of general education [5]. On the other hand, it is necessary to explain to the new students the arrangement of general education courses, so as to let the students understand why these courses are set up, what the purpose of them is, and what abilities and qualities are to be cultivated. This is because, when the new students enter the school, their knowledge of the general education course is blank, so the effect of publicity and education is the best then.

B. Optimizing the Curriculum of General Education

The results show that the general education courses of H University need to be further optimized. The curriculum setting is not reasonable, with poor integration; there are insufficient courses, and students have little autonomy to make their choice; some courses have unclear objectives and teaching cannot be carried out according to the objectives. Therefore, in order to enhance students' cognition of the value of general courses, the quality of general courses should be constantly improved. The general education courses should be closely related to the philosophy and objectives of general education. The general education courses should be set in accordance with the fundamental purpose of general education, the course objectives and the

subject objective, from macro to medium and then to micro course objectives. The course should be determined and the course content and teaching methods should be chosen according to the objectives to determine the course. From the perspective of the curriculum setting mode, the general education courses of the comprehensive class belong to the distributed compulsory system, which is also the general curriculum in colleges and universities in China. But since the distributed compulsory courses are offered by different schools and departments, there is a lack of inter-courses coherence and integration, inevitably lead to the superficial and fragmentary learning of students. Therefore, it is widely believed that the setting of core curriculum with the greatest influence should be an important attempt to reform the general education of comprehensive classes. Core curriculum is considered to be the most ideal way to embody the spirit of general education [6].

C. Strengthening the Construction of Teachers for General Education

It is very important for students to know the value of general education, as the attitude of teachers, their understanding of general education and the level of teaching will all affect students' cognition of the value of general education courses. Therefore, in order to enhance students' recognition of the value of general education courses, H University needs to constantly strengthen the teaching staff construction for general education. On the one hand, it is important to check on the threshold of teachers for general education. That means to choose teachers with good reputation, level, responsibility and great enthusiasm for general education. On the other hand, it is necessary to do a good job in the research and training of general education teachers. Regular seminars should be held for general education teachers to share and communicate with each other to promote the practice of general education courses; teachers should be organized to watch the example classes of outstanding teachers in general education so as to learn the teaching experience of outstanding teachers and reflect on individual teaching activities, and constantly improve the teaching level; and general education experts should be invited to train teachers, especially for new general education teachers, systematic training should be carried out from the perspective of philosophy, so that teachers can deeply understand the concept of general education and put it into teaching practice.

D. Enhancing the Management Level of General Education

General education is a kind of university talent cultivation mode, which embodies the management philosophy of university leadership. If universities are to truly promote the reform of general education and cultivate innovative talents, they need to constantly improve the management level of general education. Through the survey of comprehensive classes in H University, it is found that the management link is closely related to students' cognition of general education courses, which will have an infiltration effect on students' cognition of the value of general education courses. Therefore, the relevant university leaders should have a deep understanding of general education first,

and their management philosophy should reflect the thought of general education. Practice in China and abroad has shown that if colleges and universities are to truly attach importance to the reform of general education courses, they should set up a special committee for general education and a special institution to promote the reform and development of general education. In addition, relevant systems should be formulated to ensure the smooth development of general education. They should include giving policy support to teachers of general education courses, establishing evaluation and feedback mechanism of general education courses and setting up observation and discussion system etc. for general education courses. The management of general education should be meticulous and thorough, and managers at all levels should communicate regularly to jointly promote the curriculum reform of general education towards a more positive direction.

In a word, students' cognition of the value of general education courses is crucial to the success or failure of general education reform. In order to make the reform of general education in H University more targeted and better promote the reform and development of general education, it is necessary to make clear the factors that affect the value of general education courses and put forward corresponding countermeasures according to the existing problems.

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