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Establishing and Reorganizing the Evaluation Index System of Academic Advising in Sino-foreign Higher Education

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Abstract: Recent years, an innovation education model, the Sino-foreign college has been gaining its popularity in China. Compare to traditional Chinese education system, students under this kind of college will have more specific and complicated requirements. As we know from current literate research, academic advising would be an effective way of solving various problems from students. However, seldom have Chinese college had set up specific academic advising institutions, neither there is a universal standard to estimate the effectiveness of advising. So, this research aims to establish a complete evaluation index system to testify whether the current academic advising method is effective. We composed an original draft of the evaluation index, then conducted a random survey among students from Sino-foreign colleges in China to check out the importance of each evaluation index. Finally, we analyzed the survey result and then reorganized the evaluation index system by using hierarchical cluster method based on the result of the survey.

Keywords: Academic advising, educational evaluation index, hierarchical cluster

1. Introduction

As the world turns, more and more Sino-foreign cooperative higher education institutes had mushroomed in China. This innovation education mode consists of a traditional Chinese university and a foreign corporate college. Students will have similar education experience as foreign colleges while they are still in China. In that case, students under this kind of college will always have more complicated and diversified requirements than that in Chinese traditional colleges.

As we looked up scholarly research, we got to know that in America, colleges have a long history of setting up academic advising institutions (Chen,2014). These academic advising institutions are intended to solve various problems of college students, such as building up learning skills, selecting classes, and choosing or changing majors. According to the experiences of Harvard University and Stanford University, who are known as the pioneers of academic advising, some Chinese colleges also set up certain kinds of compulsory lectures that guide students get familiar with their majors as well as planning their future career in recent years (Ma, Liu,Li, 2004). Although all those methods are intended to help students better adapt to college life as well as prepare for the future, the fundamental form of academic advising in China is still different from that in the United States, and there are only a few Chinese colleges had set up specialized academic advising institution. Under that circumstance, it seems that we need a certain set of standards to estimate whether the current academic advising system is effective and reflected the requirements of students.

So, in this study, we are going to establish a complete system of evaluation index as the standard to estimate the effectiveness of current academic advising system. We will firstly summarize some important points from current literal research and investigate the current educational situation in China as the first draft of evaluation index system, then conduct an on-line survey to testify the importance of each index, and finally delete the repeated indexes and reorganize the evaluation index system by using hierarchical cluster method.

2. Research Process

2.1 Establish the Original Version of Evaluation Index

The process of academic advising requires the participation of both students and instructors. Originally, we considered estimating their behavior separately; however, we noticed that for students, the advising efforts would automatically reflect on some observable aspects, such as test score, psychological condition, and their general satisfaction. Thus, this evaluation index system will merely focus on the performance of instructors.

2.1.1 Investigation Trip in Qinghua University

From the literal research we read, we get the information that Qinghua University is the first college that set up academic advising institution in China (Zhou, J., 2014). So we went there for investigation, and we found out they set up the department of career planning and academic advising separately.

2.1.1.1. Department of Career Planning

The department of career planning in Qinghua University is an exclusive administrative department where recorded occupation status of graduates, stored students' documents and took charge of organizing activities like career fair in graduate seasons. Faculties there are merely taking charge of keeping those documents instead of giving reflective suggestions to student visit there.

2.1.1.2. Center for Student Learning and Development

The center for student learning and development is the right place that we hope to find where open to enrolled students and provided academic advising services. Students can make an appointment online through smartphones, and write feedbacks immediately. Faculties there are almost all the graduate students from Qinghua University, and they work there full-time to help their fellow students. They also told us they used experiences from Harvard University and Stanford University as references in the beginning, and gradually explored a more completed way that tailored to Chinese students. Also, they summarized some questions that frequently asked and printed pamphlets that free for students to take.

2.1.2 Original Version of Evaluation Index

Based on previous literal research papers and this investigation trip, we finished our original draft of evaluation index system. In the first draft of evaluation index system, we set up four general categories, which are known as the first-level index. They are Advising attitude and content, The qualification of advisors, Support from advising and Academic advising as a compulsory course. Each first-level index included several more detailed second-level index which will list in following passages.

2.1.2.1. Advising attitude and content

This first-level index evaluated whether the overall content is useful to students, which included nine second-level indexes: Patience of advisor, Accessibility of information provided, Motivation of advisor, Respect student privacy Communication with class instructors, Reflection and suggestions to the college, Contributions and improvements to study environment, Timely inform internship and social practice opportunities, and Practice of accessory services.

2.1.2.2. Academic advising as a compulsory course

This first-level index evaluated the qualification of advisors, which included six second-level indexes: Past experience of advisors, Professional ability of advisors, Current status of students had been consulted, Attitude of advisors, Reliability of advisors and Attendance of advisors.

2.1.2.3. Support from advising

This first-level index evaluated whether the information provided by academic advising content is useful for students, which included eight second-level indexes: Current situation of the job market, Relative research programs, Occupational requirements, Process of applying post-graduate education, Accessory services (Such as mock interview and resume revising), Relative academic lectures, Relative research programs, Internship and social practice opportunities.

2.1.2.4. Academic advising as a compulsory course

Since more and more Chinese Colleges had set up academic advising lectures, or similar academic advising courses, this first-level index evaluated the quality of academic advising when it set up as a compulsory course, including twelve second-level indexes: Course goal and syllabus, Quality of contents, Gratification of the content, Time management of the instructor, Evaluation mode of the course, Attendance of the instructor, Classroom manner of the instructor, Attitude of the instructor, Responsibility of the instructor, Classroom management, Keep on track with teaching process and Accessibility of the course content.

2.2 Estimate and Reorganize the Evaluation Index

2.2.1 Online Survey

After we settle down the original draft of the evaluation index, we need to get the opinion of students by turning the complete evaluation index system into a questionnaire.

2.2.1.1. Participants

This research is aiming to college students, so the participants of this survey should be full-time Sino-foreign college students that being randomly chosen in China.

2.2.1.2. Apparatus and Materials

Due to chronology and geographic limit, the most efficient way to get enough samples within the budget would be the on-line survey. The survey was published via Sojump (www.sojump.com), and it could be reached through smartphones. The results can be downloaded from Sojump in the form of Excel, which is suitable to be processed in SPSS in following sections. For convenience, we renamed each second-level index by arranging name from X1 to X35 to make the process of analysis easier.

2.2.1.3. Procedure

At the beginning of questionnaire, we asked some basic demographic information about participants, including their gender and current grade in college. We also asked participants to declare whether they are from Sino-foreign corporate college. If the answer is no, this survey will automatically terminate, and the result will not count as valid.

In the main section of the questionnaire, subjects were asked to estimate 35 second-level indexes and rate them according to their importance as five-point interval Likert-like scale. We suppose 5 points means strongly agree; 4 points means somewhat agree; 3 points means neither disagree nor agree; 2 points means somewhat disagree; 1 point means strongly disagree.

2.2.2 Reorganize the Evaluation Index

2.2.2.1. Reliability test

To make sure the collected data is amenable and reliable, we need to do a reliability test after we get the data. Reliability test estimated the consistency and stability of a sample (Jin, X., 2011). In this study, we use Cronbach's Alpha for the standard. The higher value of Cronbach's Alpha means higher reliability of the scale. To affirm the data set is reliable, the Cronbach's Alpha of a scale needs to be greater or equal to 0.6, and when the Cronbach's Alpha reach 0.8, this experiment will be regarded as ideal.

2.2.2.2. Clustering analysis

After testified the reliability of the sample, we can reorganize our evaluation index by conducting a clustering analysis. The clustering analysis would measure the similarity of each element, and build clusters even we do not know the specific number of categories (Zheng, Y., 2012). In this study, we will establish the final draft of evaluation index by reorganizing our 35 second-level indexes and use the method of Hierarchical Clustering for variable clustering (R).

3. Results

3.1 Reliability Test

Table 1: Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.982	0.982	35

3.2 Descriptive Information of First-level Index

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Table 2: Descriptive Information of First-level Index.

Index	Number of rating 4	Number of rating	Mean	Sd.
Patience	67(21.54%)	201(64.63%)	4.42	0.95
Accessibility of information provided	66(21.22%)	199(63.99%)	4.41	0.94
Motivation	69(22.19%)	142(45.66%)	4.02	1.09
Respect student privacy	45(14.47%)	218(70.1%)	4.46	0.98
Communication with class instructors	88(28.3%)	145(46.62%)	4.11	1.04
Reflection and suggestions to the college	77(24.76%)	171(54.98%)	4.24	1.04
Contributions and improvements to study	72(23.15%)	175(56.27%)	4.27	1.01
Timely inform internship and social practice	76(24.44%)	157(50.48%)	4.15	1.03
Practice of accessory services (Such as mock interview and resume revising)	93(29.9%)	148(47.59%)	4.42	1.05

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Table 3: The qualification of Advisors.

Index	Number of rating	Number of rating 5	Mean	Sd.
Past experience of advisors	101(32.48%)	141(45.34%)	4.13	1.01
Professional ability of advisors	52(16.72%)	227(72.99%)	4.54	0.91
Current status of students had been consulted	77(24.76%)	186(59.81%)	4.36	0.96
Reliability of advisors	102(32.8%)	142(45.66%)	4.16	0.95
Attitude of advisors	94(30.23%)	161(51.77%)	4.25	0.97
Attendance of advisors	94(30.23%)	138(44.37%)	4.09	1.02

Table 4: Support from Advising.

Index	Number of rating 4	Number of rating	Mean	Sd.
Current situation of the job market	85(27.33%)	166(53.38%)	4.25	0.99
Relative research programs	69(22.19%)	183(58.84%)	4.30	1.01
Occupational requirements	79(25.4%)	176(56.59%)	4.31	0.95
Process of applying	85(27.33%)	176(56.59%)	4.32	0.95
Accessory services	95(30.55%)	164(52.73%)	4.27	0.98
Relative academic lectures	98(31.51%)	112(36.01%)	3.93	1.01
Relative research programs	93(29.9%)	131(42.12%)	4.04	1.02
Internship and social practice opportunities	87(27.97%)	158(50.8%)	4.19	1.02

Table 5: Academic Advising as a Compulsory Course.

Index	Number of rating 4	Number of rating	Mean	Sd.
Course goal and syllabus	89(28.62%)	179(57.56%)	4.36	0.91
Quality of contents	70(22.51%)	193(62.06%)	4.39	0.93
Gratification of the content	89(28.62%)	165(53.05%)	4.26	0.98
Evaluation mode of the course	91(29.26%)	169(54.34%)	4.31	0.92
Time management of the instructor	93(29.9%)	164(52.73%)	4.29	0.92
Attendance of the instructor	75(24.12%)	183(58.84%)	4.33	0.98
Classroom manner of the instructor	88(28.3%)	154(49.52%)	4.18	0.99
Attitude of the instructor	51(16.4%)	224(72.03%)	4.53	0.91
Responsibility of the instructor	84(27.01%)	145(46.62%)	4.09	1.06
Classroom management	87(27.97%)	169(54.34%)	4.28	0.97

Index	Number of rating 4	Number of rating	Mean	Sd.
Keep on track with teaching process	84(27.01%)	181(58.2%)	4.36	0.92
Accessibility of the course content	66(21.22%)	204(65.59%)	4.45	0.93

3.3 Clustering Analysis

3.3.1 Cluster Process

Table 6: Cluster Process

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	17	18	0.893	0	0	2
2	16	17	0.873	0	1	9
3	26	27	0.865	0	0	8
4	24	25	0.857	0	0	11
5	1	2	0.834	0	0	17
6	6	7	0.819	0	0	25
7	31	35	0.818	0	0	10
8	26	28	0.812	3	0	15
9	16	19	0.807	2	0	13
10	31	34	0.801	7	0	14
11	11	24	0.789	0	4	15
12	21	22	0.783	0	0	19
13	16	20	0.780	9	0	27
14	31	33	0.770	10	0	16
15	11	26	0.757	11	8	22
16	29	31	0.743	0	14	23
17	1	4	0.735	5	0	29
18	10	13	0.722	0	0	28
19	21	23	0.721	12	0	33
20	8	9	0.711	0	0	25
21	14	15	0.704	0	0	28
22	11	12	0.700	15	0	27
23	29	32	0.695	16	0	26
24	3	5	0.691	0	0	29
25	6	8	0.689	6	20	31
26	29	30	0.680	23	0	30
27	11	16	0.655	22	13	30
28	10	14	0.637	18	21	32
29	1	3	0.635	17	24	31
30	11	29	0.623	27	26	32
31	1	6	0.609	29	25	34
32	10	11	0.597	28	30	33
33	10	21	0.581	32	19	34
34	1	10	0.565	31	33	0

3.3.2 Tree Diagram

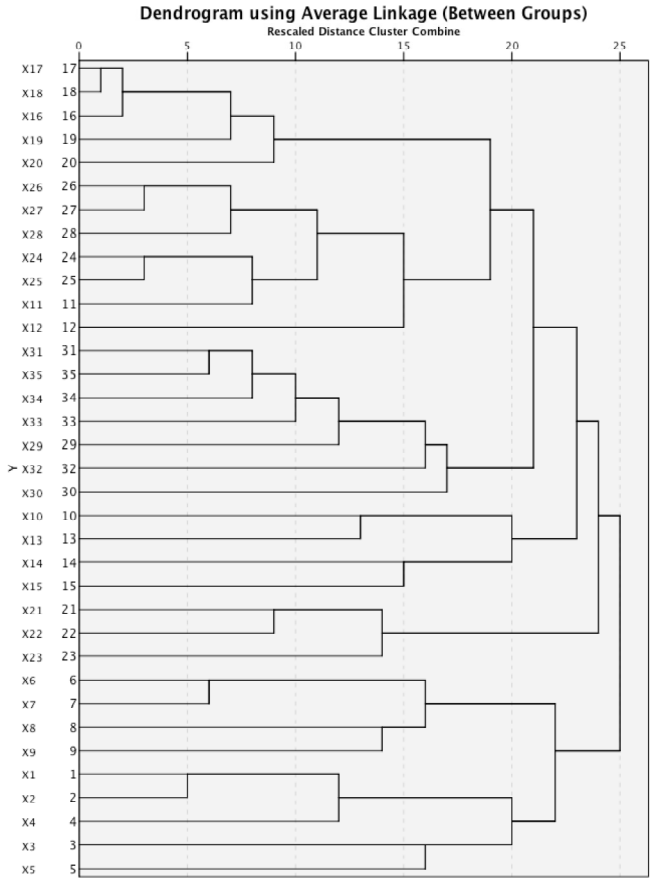

Figure 1. Diagram Using Average Linkage.

4. Discussions

4.1 Reliability Test

Although we found out that some students are giving all index the lowest score, we still keep this part of the data. By using SPSS, we observed that the Cronbach's Alpha of this scale had reached 0.982, which indicates the questionnaire has a great internal consistency and reliability. It also showed the independence of the sample is strong, and the target of this questionnaire is clear.

4.2 Descriptive Information of First-level Index

The charts showed general descriptive information of each index. As we can see, there are only six indexes whose number of people rating 4 and 5 are less than 75%. They are Motivation, Communication with instructors, Attendance of advisors, Responsibility of the instructor, Relative academic lectures, Relative research programs. Also, the standard divination of almost all indexes is around 1, which demonstrated there were merely minor influences of extreme value. The original version of the criteria could be regarded as well represented the requirements of students.

4.3 Clustering Analysis

The Agglomeration Schedule listed the detailed cluster process and relative coefficient. Under the circumstances that several second-level indexes may including similar meaning, we can merge them to make the evaluation index simple.

As we can see from the diagram, the result of cluster analysis could be observed as seven general clusters. Except for Professional ability of advisors (X11) and Current status of students had

been consulted (X12) that are rearranged to the group that contains indexes X24 to X28, the number in each category is overall in sequence, which indicated that the original organization of index is appropriate.

The first general cluster included Current situation of the job market (X16), Relative research programs (X17), Occupational requirements (X18), Process of applying post-graduate education (X19) and Accessory services (Such as mock interview and resume revising) (X20). The index X16, X17, and X18 had been merged in an early step, so we merge them as Developmental information for students, and this category will be renamed as Support for future planning.

The following cluster included Course goal and syllabus (X24), Quality of contents (X25), Gratification of the content (X26), Time management of the instructor (X27), Evaluation mode of the course (X28), Professional ability of advisors (X11), and Current status of students had been consulted (X12). X26 and X27 will be merged as Manipulation of course content. X24 and X25 will be merged as General information of the course. Since the general content of this category had not been changed, this category will be still named as Academic advising as a compulsory course.

The following three clusters are quite independent when compared to other clusters. Each second-level index had not been merged until very late so that we will preserve the name of each second-level index in these three clusters. The cluster including Attendance of the instructor (X29), Classroom manner of the instructor (X30), Attitude of the instructor (X31), Responsibility of the instructor (X32), Classroom management (X33), Keep on track with teaching process (X34), and Accessibility of the course content (X35) will be renamed as Classroom management of advising compulsory course. The cluster including Past experience of advisors (X10), Attitude of advisors (X13), Reliability of advisors (X14), and Attendance of advisors (X15) will be renamed as The qualification of advisors. The cluster including Relative academic lectures (X21), Relative research programs (X22), Internship and social practice opportunities (X23) will be renamed as Practical opportunities provided by academic advising.

Another cluster including Reflection and suggestions to the college (X6), Contributions and improvements to study environment (X7), Timely inform internship and social practice opportunities (X8), and Practice of accessory services (X9). In this cluster, X6 and X7 will be merge as General improvements to the college, and the cluster will be renamed as Contributions to academic advising.
The last cluster is consists of Patience of advisor (X1), Accessibility of information provided (X2), Motivation of advisor (X3), Respect student privacy (X4), and Communication with class instructors (X5). X1 and X2 will be merged as The kindness of advisor, and this cluster will be renamed as Properties of advisor.

4.4 Rearranged Index Based on Cluster Result

4.4.1 Support for future planning

This first-level index will evaluate the support of academic advising in the aspect of future planning, including following three second-level indexes: Developmental information for students, Process of applying post-graduate education and Accessory services (Such as mock interview and resume revising).

4.4.2 General administration of advising compulsory course

If we set academic advising as a compulsory course, this first-level index will evaluate how well will this instructor maintain and planning the class. This first-level index including following seven second-level indexes: Manipulation of course content, Evaluation mode of the course, General information of the course, Professional ability of instructors and Current status of students had been consulted.

4.4.3 Classroom management of advising compulsory course

Following the general administration, this first-level index will typically evaluate the classroom manner under control of instructor, including following seven second-level indexes: Attitude of the

instructor, Accessibility of the course content, Keep on track with teaching process, Classroom management, Attendance of the instructor, Responsibility of the instructor, and Classroom manner of the instructor.

4.4.4 The qualification of advisors

To evaluate the qualification of the instructor as an academic advisor, we need to including following five second-level indexes: Past experience of advisors, Attitude of advisors, Reliability of advisors, and Attendance of advisors.

4.4.5 Practical opportunities provided by academic advising

This first-level index will evaluate the practice opportunities that informed by academic advising, including following three second-level indexes: Relative academic lectures, Relative research programs, Internship and social practice opportunities.

4.4.6 Contributions to academic advising

We also need to evaluate the contributions that provided by academic advising. This first-level index will include three second-level indexes: General improvements to the college, Timely inform internship and social practice opportunities, Practice of accessory services.

4.4.7 Properties of advisor

Finally, we need to estimate the general characteristic of advisors. This first-level index consists of four second-level indexes: The kindness of advisor, Respect student privacy, Motivation of advisor and Communication with class instructors.

4.5 Limitations and Future Planning

The current stage of our study had already finished the complete evaluation index for academic advising in Sino-foreign corporate higher education. However, the best way to check if our estimation model is useful is to have a real practice. We can accomplish this by collecting the result from colleges that using our estimation index. Furthermore, reading more literal research papers will always contribute a wider view of our study. These are all improvements we could make in later stages.

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