Research on the Optimization of Teachers' Performance Appraisal System in Application Oriented Universities

Yingying Pan

School of hotel management, Zhejiang Yuexiu University, Shaoxing, 312000, China;

The Hong Kong Polytechnic University, Hong Kong, 999077, China.

359823721@qq.com

Abstract

With the rising status of talents in the unit, colleges and universities advocate the "people-oriented" management philosophy, and achieve the purpose of reasonable distribution of interests and effective incentive of teachers through performance appraisal. Performance appraisal in human resource management has become the key of university management. It can effectively promote individual behavior and guide university teachers to adjust individual behavior towards the overall strategic goal of colleges and universities. This paper explains the necessity and feasibility of the problems studied, and points out the important practical significance of improving, promoting, constructing and even perfecting the performance appraisal system of application-oriented universities. Through the extraction and summary of the research results of domestic and foreign scholars, this paper focuses on how to build a comprehensive, scientific and practical performance appraisal system for teachers in Applied Undergraduate Colleges and universities in China. Firstly, based on the definition of Application -oriented Universities and their teachers, this paper analyzes the current situation of the management of teaching staff in Application-oriented Universities in China, and analyzes the main problems existing in the teaching staff from various angles. Secondly, based on the analysis of the current situation of the teaching staff, this paper analyzes the current situation of performance appraisal, and puts forward the problems existing in the performance appraisal of application-oriented universities. At the same time, it makes a comparative analysis on the assessment of research-oriented universities and application-oriented universities. Then, it clarifies what aspects should be evaluated in teacher assessment and illustrates with examples the simple steps of teacher performance appraisal in Application-oriented Universities and the establishment of evaluation index system. Finally, the paper puts forward that the performance evaluation of application-oriented universities should combine the evaluation of students, department heads and peers into 360 degree comprehensive evaluation.

Keywords

Applied Undergraduate; University Teachers; Performance Appraisal; Optimization Research.

1. Research background

In 2019, the inspection report of law enforcement inspection team of the Standing Committee of the National People's Congress pointed out that China's higher education should mainly realize the transformation from traditional system to modern higher education system through the reform of evaluation mechanism, resource allocation mode and governance reform. The development of China's higher education focuses on the extension of scale expansion and spatial expansion characteristics, and the core of quality improvement and organization optimization is development. In this context, the implementation of the outline of the national medium and long term education reform and development plan (2010-2020) and the 13th five year plan for the development of national education cause has been implemented. It is required to establish the classification system of colleges and universities in China. The classification theory of colleges and universities has a certain foundation. UNESCO education standard classification and Boyer's academic quartering are the conceptual

framework of academic classification, and the function theory of colleges and universities is the action criterion for the reform of university classification.

The Carnegie Foundation for the promotion of teaching in the United States, the u-map of the European Union, and the Ministry of education, education, science and technology of Japan have made systematic studies on the classification of colleges and universities. Chinese scholars (Shi qiuheng & Kang min, 2017) Combined with the current situation of the central government policy, the paper forms the idea of classification according to the types of talent training, and establishes the consensus of three types of atmosphere research, application and vocational skills in Colleges and universities in China.

In recent years, under the background of strong demand for human resources and skills in economic development, some colleges and universities in our country mainly focus on the application-oriented talents training. The school running concept, school orientation, teaching staff, discipline construction, funding, management mechanism, operation mechanism and other aspects are in the exploratory stage, and the research on various perspectives and levels of application-oriented undergraduate is increasing.

Application oriented colleges and universities are an important part of China's undergraduate colleges and universities. According to the information published on the website of the Ministry of education, there were 597 undergraduate colleges in 1999 and 1265 in 2019. During this period, the total number of undergraduate colleges and universities increased significantly, while the number of central affiliated colleges and universities decreased, and the number of local colleges and universities increased significantly, especially the number of application-oriented universities, Most of them are application-oriented. It can be seen that the number of new research (Academic) Universities in the past 20 years is not obvious, while the newly added universities are basically Local Application-oriented Universities.

Table 1 changes in the number of undergraduate institutions

year	Number of undergraduate institutions	Institutions affiliated to the central government	Application Oriented Universities
1999	597	207	/
2004	684	104	9
2009	1090	106	370
2014	1202	110	420
2019	1265	114	434

Source: the statistics of the Ministry of education website

Yiqi Mei, former president of Tsinghua University, said: "a university is not a building, but a master." Compared with research-oriented universities, the development path of application-oriented universities is quite different. Among the factors restricting the development of Application-oriented Universities in China, the problem of teachers is the key factor. The performance appraisal system of research-oriented university teachers is relatively mature. The concept of application-oriented undergraduate course has really risen in recent years in China. As for the research on the performance evaluation of teachers in application-oriented universities, there are few researches. Nowadays, the personnel management system of application-oriented universities still follows the traditional system of research-oriented universities. However, due to the change of teaching and training objectives today, the personnel management system of application-oriented universities still follows the traditional system of research-oriented universities. The contradiction between the school and the teachers has indirectly affected the students, thus affecting and limiting the long-term development of the school.

2. Literature References

2.1 Incentive theory

The main incentive theories in management include Maslow's hierarchy of needs, Herzberg's two factor theory, achievement demand theory, expectation theory, equity theory and Porter Lawler model. Porter Lawler's theory of expectancy was put forward by American behavioral scientists Leman Porter and Edward Lawler in 1968.In order to form a virtuous circle of incentive effort performance reward satisfaction and reward effort from satisfaction, the theory still plays an important role in foreign enterprise management.

2.2 Research on performance appraisal

Throughout the development of performance appraisal, there are six stages: reward and punishment adjustment under the condition of equalitarianism, subjective evaluation, "virtue, ability and diligence", MBO, performance appraisal based on KPI (key performance indicator), and performance management based on Strategy (BSC).

Performance evaluation research has been relatively mature, and the existing performance evaluation pays more attention to refinement and practical relevance. At the same time, with the development of statistical methods, it brings convenience to the research of performance evaluation. The causal model and personal performance model of performance evaluation are proposed. The study of the structure of performance itself has also enhanced people's understanding of performance, especially the distinction between task performance and relational performance, which has been supported by quite a number of empirical studies.

2.3 Research on performance appraisal of teachers in application oriented Universities

3.3.1 Summary of research on performance appraisal of University Teachers

Since the beginning of the 20th century, European and American countries have carried out the exploration of establishing teacher evaluation system. However, in the first half of the 20th century, there were still few schools that used formal procedures to evaluate teachers. The formal teacher evaluation system came into being in the 1950s.However, it was not until the 1970s that the teacher evaluation system began to be widely used in schools, and the research on teacher evaluation also developed rapidly in this period. Since the 1990s, the research in this field has developed more rapidly, and a large number of teacher evaluation models and methods have emerged.

Teacher evaluation in China began in the 1960s and stagnated during the cultural revolution.Since the 1990s, teacher assessment has been developed again.The research on the performance appraisal of university teachers in China can be summarized into two aspects

The first is to learn from the development experience of foreign teachers' evaluation to construct a new teacher evaluation system; the second is to conduct quantitative research on the problems existing in domestic teacher evaluation and explore its solutions.

3.3.2 Research review on performance appraisal of teachers in Applied Undergraduate Universities

Domestic research on application-oriented undergraduate education is gradually becoming large-scale. In the database of CNKI, 24800 relevant records have been found with "application-oriented undergraduate" as the key word. The main research contents focus on teaching reform, personnel training, school positioning and practical teaching. The search for "application-oriented undergraduate" and "performance appraisal" as keywords shows only 36 relevant records, From 2011 to 2015, there were only 7 related literatures, and scholars' research on them increased gradually from 2016. Researcher (Zhang Meihe & Xie linling, 2018; Zheng Zhen, 2012) This paper points out that there are several problems in the performance management of full-time teachers in application-oriented universities, such as the disconnection between performance management and strategic management, the lack of emphasis on "teachers' practical skills" in the setting of performance indicators, the lack of consideration of the training objectives and characteristics of applied undergraduate talents, the emphasis on short-term objectives and the neglect of long-term objectives,

formalized assessment and delayed feedback. Finally, it puts forward the suggestion of Applying Balanced Scorecard in the performance management of full-time teachers in application-oriented universities. (Zheng Xin, 2017) It is mentioned that the existing incentive mechanism in application-oriented universities is not friendly to young teachers, and there are some problems such as lack of proper guidance, insufficient attention to the cultivation of young teachers and lack of scientific performance evaluation system.

At present, most of the research focuses on the problems and causes of the performance appraisal of application-oriented university teachers. However, the research on the evaluation system of application-oriented university teachers, especially the young teachers, is mainly based on theory, and there are few empirical studies on the scientific and reasonable construction of the performance appraisal system of application-oriented university teachers.

3. The current situation of teachers' performance appraisal in application-oriented universities

3.1 The current situation and problems of teaching staff in Universities

4.1.1 Analysis of the current situation of teaching staff in Universities

With the vigorous development of economy, China's higher education has made great progress in the past 20 years. At present, the basic situation of teaching staff in Colleges and universities is as follows:

(1) The number and educational structure of full-time teachers in Colleges and universities in China

In the development of Chinese universities for more than 20 years, the construction and management of full-time teachers has always been an important link in the chain of running a school. As can be seen from table 2 below, in addition to the substantial increase in the number of university teachers, the education background has been greatly improved. The proportion of master's degree has increased from 23% in 1999 to 37% in 2019, and the promotion of doctoral students is more obvious, from the original 5% to 27%. This shows that the overall strength of university teachers has made obvious progress.

Table 2 The number of full-time teachers and their educational background structure in Colleges and universities in China (unit: person)

year	total	doctor	master	bachelor	other
1999	425682	23136	100492	226173	20055
2004	858393	70487	223860	532705	31341
2009	1295248	175872	434162	314771	8922
2014	1534510	313136	552854	648230	20290
2019	1740145	475787	639922	610369	14067

Source: Department of development and planning, Ministry of education

Table 3 Status of professional titles of full-time teachers in Colleges and universities in China [1] (unit: person)

year	Number of Teachers	Senior	Deputy senior	intermediate	primary	No title
1999	425682	39359	125900	156390	83196	20837
2004	858393	83231	250251	280905	183285	60721
2009	1295248	138161	360675	477541	247962	70909
2014	1534510	189136	448652	613729	195763	87257
2019	1740145	229157	525371	673857	180196	131564

Source: Department of development and planning, Ministry of education

(2) Professional title structure of full-time teachers in Colleges and universities in China

As can be seen from table 3 below, although the full-time teachers in Colleges and universities have developed rapidly, the proportion of senior professional titles has not changed significantly. In 1999,

senior professional titles accounted for 9% and deputy senior titles accounted for 29%; in 2019, senior professional titles accounted for 13% and deputy senior titles accounted for 30%. It can be seen that although the academic level of university teachers has been greatly improved, the proportion of professional titles is still in a balanced state.

(3) The age structure of full-time teachers in Colleges and universities in China

It can be seen from table 4 that the age level of full-time teachers in Colleges and universities in 1999 is mainly under 40 years old, while in 2019, the overall age group is mainly concentrated in 31-45 years old. According to analysis and speculation, this is also a reflection of the improvement of College Teachers' academic level. The improvement of academic qualifications leads to the delay of employment, and the age group of the backbone of teaching has risen for 5 years.

Table 4 Age structure of full-time university teachers in China (unit: person)

year	Below 30	31-35	36-40	41-45	46-50	51-55	56-60	Over 61
1999	117406	94150	72324	45161	25496	28818	32095	10232
2004	246246	159483	161372	117917	77328	43542	36037	16468
2009	353441	255487	213245	198847	131092	82386	40399	20351
2014	221992	357844	292771	226865	186599	149982	69700	28757
2019	188502	306285	387084	293724	215964	174842	136010	27650

Source: Department of development and planning, Ministry of education

4.1.2 Main problems of teaching staff in Application-oriented Universities

Based on the investigation of the construction and training of teachers in Zhejiang application-oriented universities, the problems are mainly reflected in the following aspects:

(1) The stability of high-level teachers is poor and the turnover rate is high.

At present, there are two types of teachers in applied universities that the college trains by itself and introduces high-level talents. Taking the application-oriented universities we investigated as an example, the local government has certain subsidies for talents with high professional titles and academic qualifications. At the initial stage of introduction, both sides signed a service agreement with a fixed number of years. However, in the process of work, high-level talents can see that there are differences in material treatment, social recognition and social welfare between application-oriented universities and research-oriented universities, which may terminate the employment relationship at any time and go to another university. These factors result in the mobility of high-level talents of application-oriented university teachers, which makes the application-oriented university teachers in an unstable state.

(2) The scientific management of the teaching staff needs to be improved

In the process of its development, the importance of talents is self-evident. However, there are still the same management system, using the traditional management methods of research-oriented universities, and not combining with the characteristics of Application-oriented Colleges and universities to keep pace with the times. In the training, evaluation, professional title and further study of teachers in application-oriented universities, there is a phenomenon that research is emphasized and application is ignored. The school has not established a stable system for the evaluation of teaching quality and the standardization of teaching behavior. For example, there is no stable teaching plan for individual majors, the talent training program is revised year by year, and there is no high-quality teaching material suitable for Application-oriented College Students. There is also a lack of strict standards in teaching, and courses are often set according to the existing teachers or the subjective preference of leaders, which makes it impossible to conduct unified teaching quality inspection and evaluation [2].

(3) Teachers' professional growth is limited.

Compared with research-oriented universities, application-oriented universities have different professional requirements for teachers. This is a relatively unified and neglected part in the process

of teacher training. The goal of talent cultivation in application-oriented universities is to master the basic theoretical knowledge and have certain practical ability. This requires teachers themselves in addition to a solid theoretical foundation, but also have practical application ability. The teaching task of application-oriented university teachers is heavy, and the lack of post service education is the current situation that most application-oriented colleges and universities are facing. The channel of learning and communication in school is single, and the alternative training methods are temporary training and participating in various kinds of off campus training. It is a common phenomenon that teachers in Application-oriented Colleges and universities have heavy teaching tasks and certain scientific research tasks at the same time. Practical ability training needs a certain material guarantee, and scientific research work needs certain material conditions. Therefore, the professional development of applied university teachers is limited.

3.2 Analysis of the current situation of teachers' performance appraisal in Applied Universities

The scientific and objective credibility of performance appraisal determines the effectiveness of human resource management. At present, the phenomenon of traditional personnel management in application-oriented universities is quite prominent. The method of teacher assessment is mainly qualitative description. Although qualitative assessment has its own characteristics, it is not easy to distinguish the specific performance of each teacher. It is easy to be affected by the subjective consciousness of leaders and has no obvious incentive effect on teachers. The assessment of the year has become a "burden" for leaders and managers. In some application-oriented universities, this phenomenon even exists for a long time.

For example: X school carries out an assessment on teachers every year. The assessment results are divided into three grades: "excellent, good and qualified". The proportion of excellent students accounts for 20% of the total. Most of them are good, and a few are qualified. Each department of the teacher series is assessed independently and supervised by the party and government Joint Committee of the Department. The leaders of each department and ordinary teachers carry out the evaluation at the same time. The whole process of evaluation is involved, and even the final score is counted by the leaders of each department. Therefore, the number of outstanding teachers is basically obtained by the leaders of each department every year. Before the start of the year-end evaluation, everyone has been tacit about the evaluation results. The original intention of the evaluation has been violated, the evaluation is meaningless, and the evaluation has not played a role in motivating teachers.

In order to better understand the actual situation of performance appraisal for applied undergraduate teachers, a questionnaire about performance appraisal was conducted in Zhejiang YX University, which is shown in Appendix 1 and the documents related to performance appraisal in the university are shown in Appendix 2. Founded in 1981, YX University is a provincial full-time undergraduate college approved by the Ministry of education and the provincial people's government. As of February 2020, there are more than 16000 full-time students, 34 undergraduate majors and 9 secondary colleges.

The main purpose of this survey is to fully understand teachers' views on the implementation of performance management in the university, to understand the impact of performance management on teachers' actual work, and to provide basis for improving teachers' performance management and promoting the construction of school teachers. Survey object: in service teachers in application-oriented universities. The survey objects were selected by random sampling.

Survey sample: full time teachers engaged in normal teaching work in YX college. It includes middle-level cadres, retired teachers and ordinary teachers.82 questionnaires were distributed and 80 valid questionnaires were collected.

Survey time: June 2020

Survey method: questionnaire survey.

4.2.1 Descriptive statistical analysis of questionnaire results
4.2.1.1 Results of descriptive statistical analysis

Table 5 shows the descriptive statistical analysis results of the questionnaire

Table 5 Questionnaire results of teacher performance appraisal

Questionnaire content	option	Number of people (percentage)	option	Number of people (percentage)	option	Number of people (percentage)	option	Number of people (percentage)
Gender	male	16(20%)	female	64(80%)				
Age	Under 30	13(16%)	30-40 years old	45 (56%)	40-50 years old	15 (19%)	Over 50	7(9%)
title	assistant	9(11%)	lecturer	53(67%)	associate professor	13(16%)	professor	5(6%)
education	doctor	18(23%)	master	48(60%)	undergraduate	14(17%)		
Clear the main contents of the performance appraisal of our school	clear	36(45%)	Not too clear	43(54%)	unclear	1(1%)		
How to understand the content of performance school assessment	College official notice	47(59%)	The leader announced it orally	27(33%)	Colleagues told me in private	3(4%)	Do not understand	3(4%)
Is the assessment standard reasonable	reasonable	30(37%)	Not very reasonable	47(59%)	In urgent need of improvement	3(4%)		
Whether to participate in the standard formulation and whether the opinions are adopted	Participated but not adopted	21(26%)	No participation, but suggestions can be put forward, which can be adopted as soon as they are reasonable	32(40%)	It's none of my business not to be involved in it	27(34%)		
Before the results of performance appraisal come out, do you get the help and guidance from the manager	often	6(8%)	Sometimes	44(55%)	very seldom	24(30%)	never	6(7%)
Do you get help from professional teachers	often	18(22%)	Sometimes	44(55%)	very seldom	6(8%)	never	12(15%)
Do you think the result of performance appraisal is fair and reasonable	fair and reasonable	27(34%)	It's not fair and reasonable	53(66%)				
Do you feel conflict with other social work arrangements when you achieve your goals	often	3(4%)	Sometimes	47(59%)	very seldom	18(22%)	never	12(15%)
Do you get feedback and suggestions after the evaluation	Managers give clear proposals and expectations	6(8%)	The manager conveyed his opinions in other ways	30(37%)	There are no comments on the classification	21(26%)	There was no feedback	23(29%)
Will the evaluation result affect the salary, promotion and appointment	meeting	68(85%)	can't	12(15%)				
Do you have a better understanding of the school's philosophy through the assessment	yes	50(63%)	no	30(37%)				
Does the assessment help to improve professional skills	yes	3(4%)	It helps	53(66%)	very seldom	21(26%)	never	3(4%)
Impact on colleague relations	Intense competition	3(4%)	Create a competitive atmosphere	21(26%)	Make colleagues cooperate in competition	27(34%)	Almost no impact	29(36%)
Can team cohesion be enhanced by adding team assessment content	Certainly	9(11%)	probably	62(78%)	can't	9(11%)		
Comments on Assessment	They include restraining enthusiasm, working passively, improving wages and salaries, being more fair, fair and transparent, politicizing Taihang, inclining dynamic balance to the front line, regular feedback, adoption of suggestions, unbalanced treatment between administration and teachers, unreasonable index formulation, and unreasonable wage structure							

According to table 5, the following conclusions are drawn:

(1) The basic situation of teachers: most teachers are under 40 years old, accounting for 78%.The proportion of lecturers' professional titles is 67%, and that of master's degree is 60%.Although the proportion of talents with high professional titles and academic qualifications has increased, there is still a lack of academic leaders and leaders.

(2) Assessment process: most of them are not very clear about the content of the assessment. More than half of the people understand the assessment content through the school official documents. 59% of the people think that the assessment standard is unreasonable, 26% of them participate in the formulation of the assessment standard and the adoption of the opinions, and 66% think that the assessment results are unfair. This shows that the openness, transparency, scientificalness and publicity of the assessment need to be strengthened.

(3) Appraisal result level: only 8% of the feedback got clear feedback from managers, and 55% did not receive obvious feedback. More than half of the people only knew the level of the assessment, which weakened the significance of the assessment and made the performance appraisal a mere formality. Assessment results will affect the interests of individuals, help professional promotion, and have a certain impact on the relationship between colleagues. If the team assessment is increased, the situation will be better, and it also plays a certain role in creating a working atmosphere.

Generally speaking, the current performance appraisal system is still lacking in the scientificalness of process management and the comprehensiveness of result feedback, and it has not achieved the expected effect. It is a mere formality and has not achieved its original purpose of openness, fairness and justice.

4.2.2 Problems in the performance evaluation of teachers in Application-oriented Universities

Combined with the questionnaire analysis, this paper summarizes the problems existing in the performance appraisal of application-oriented university teachers.

The performance appraisal of the vast majority of application-oriented universities still follow the traditional university evaluation system. However, there are often some misunderstandings in the performance appraisal. This paper discusses the starting point, purpose, function, subject, index, design scheme and result of performance appraisal in order to avoid unnecessary problems in teacher performance appraisal. However, the performance appraisal of teachers' work in application-oriented universities is a kind of person to person evaluation. In this process, there will be some mistakes, which will affect the evaluation effect. The problems of teachers' performance appraisal in application-oriented universities are summarized as follows.

(1) The index of performance appraisal needs to be refined

The main purpose of performance appraisal is to encourage, supervise and control. The frequency of assessment should not be one size fits all according to different assessment contents. Performance assessment should be linked with training, position, salary, welfare and other elements, and all teachers should pay attention to the learning and understanding of the content of performance appraisal.

(2) Wrong purpose of performance management

Although performance management is an important way to restrain teachers' behavior, the goals of schools and ordinary teachers are consistent rather than antagonistic. Performance management is more incentive oriented, and scientific reward and punishment design reflects the orientation of organizational culture. Excellent organizational culture is based on "opening flow" and supplemented by "reducing expenditure".

(3) The subject of performance appraisal is not clear

Is the subject of performance appraisal the assessment of each department in charge or the school human resources department? The relationship between the two must be clarified. The human resources department of the school is responsible for the development, improvement, supervision and file management of the performance appraisal system, so as to ensure the scientific and reasonable

development of this work. The competent departments at all levels are the most familiar with teachers' behavior, so they are the main executors of the assessment.

(4) The index of performance appraisal is unreasonable

① Application oriented universities only focus on quantitative indicators, not qualitative indicators. ② Key performance indicators are not established correctly.③ Empty generalization of key performance indicators.

(5) Problems in the design of performance appraisal scheme

① There is a one-way evaluation in the performance evaluation of application-oriented university teachers. There is only the assessment of the manager to the teacher, no assessment of the teacher to the manager, and no consideration of the feedback of the managed. ② Performance appraisal should run through the whole teaching process. ③ The standards of teachers' performance evaluation in application-oriented universities are too rough or too detailed. ④ Random selection of assessment tools.

(6) Problems easily neglected in the process of performance appraisal

① The evaluation design ignores the cultural characteristics of the unit. ② it focuses on individual performance appraisal and ignores team assessment. ③ The content of performance appraisal is equal to the completion of all the work. ④ In the performance appraisal of application-oriented university teachers, they blindly follow the new international concepts and do not consider the applicability of the theory and method.

(7) On the results of performance appraisal

The most important part of assessment is the feedback of results, which is often ignored. The application of the assessment results is not strong, just a formality, and even put the results on the shelf, do not do any processing. The assessment results have no incentive and supervision effect on teachers, no help for the realization of organizational goals, and have little significance and waste human and material resources.

4. The index system of teachers' performance evaluation in application‑oriented universities

4.1 Theoretical conception of performance evaluation index system for teachers in Application‑oriented Universities

Behaviorism psychology believes that the strengthened behavior will recur, while the non reinforced behavior will fade away [3]. If teachers' performance evaluation and salary payment are understood as strengthening the results of teachers' past behavior, then the teachers' behaviors included in the evaluation will be retained because of the reinforcement, and the behaviors not included in the evaluation will disappear because of being ignored. Good human resource management should include all aspects of the organization's expected contribution to the work into the evaluation system.

Scientific and reasonable evaluation index should have four characteristics .The first is to reflect the actual contribution of employees to the organization as the starting point and destination; the second is to encourage the morale of employees; the third is to cover all aspects of employees' contribution; the fourth is to take quantitative indicators as the basis.

4.2 Design of performance evaluation index system for teachers in Application‑oriented Universities

First, evaluate the working attitude of teachers. In the assessment process, we can refine this index into: ① teachers' attitude towards students. ② Teachers' attitude towards the subject. ③ Teachers' attitude towards school.

Second, the teaching effect of teachers. The evaluation indexes are: 1) teaching methods.② Teaching content. ③ Student achievement.

Third, scientific research level. At present, application-oriented universities attach great importance to the quantity and quality of subjects, papers and publications.

Fourth, ideological and political performance. Ideological and political performance is the driving force of work, which can 't be ignored.

At present, most of the application-oriented colleges and universities often use the following two examples.

Table 6 is the standard format of year-end evaluation of X school, which can be used as a reference. It is more conventional and thick line, which is the basic form of assessment in general application-oriented universities. Different schools have different work centers, and the distribution of scores will be different. Some schools have the form of additional points. The assessment results should be fed back to the examinees in a practical and realistic way.

Table 7 is the performance evaluation form of teachers in YX college. The evaluation content is also combined with the four aspects of morality, ability, diligence and performance. However, the form and content of the evaluation are different and relatively delicate. According to the actual needs of the school, there are more quantifiable contents. From this table, we can clearly see the details of the effect of teachers' work.

Table 6 X school teacher assessment index system

Primary indicators	Secondary indicators	Score	Assessment criteria	score	remarks
Virtue 20 branch	have ardent love for the motherland	3	Energy (3) basic energy (2) unable (0)		
	Carrying out the party's educational policy	3	Energy (3) basic energy (2) unable (0)		
	Observe discipline and law	3	Energy (3) basic energy (2) unable (0)		
	Professional ethics as a model	3	Energy (3) basic energy (2) unable (0)		
	working attitude	4	Serious (4) basically serious (2) not serious (0)		
	Collaboration	4	Energy (4) basic energy (2) unable (0)		
Diligent 30 branch	Educational workload	3	Foot (10) insufficient (3-7) no (0)		
	faculty load	10	Foot (3) insufficient (1-2) no (0)		
	Manage workload	3	Foot (3) insufficient (1-2) no (0)		
	Research workload	7	Foot (7) insufficient (2-5) no (0)		
	Attendance	3	Good (3) good (2) poor (0)		
	Study hard	4	Good (4) good (2) poor (0)		
Can 10 branch	Professional basic knowledge level	2	Strong (2) strong (1) poor (0)		
	Application ability of professional technology	2	Strong (2) strong (1) poor (0)		
	Educational ability	2	Strong (2) strong (1) poor (0)		
	Teaching ability	2	Strong (2) strong (1) poor (0)		
	Scientific methods	1	Good (1) good (0.5) poor (0)		
	Management ability	1	Strong (1) strong (0.5) poor (0)		
Performance 40 branch	Achievements in Education	5	Complete as planned (5) partially completed (3) not completed (0)		
	Teaching achievements	15	Completed as planned (15) partially completed (5-10) not completed (0)		
	Achievements in scientific research	10	Complete as planned (10) partially completed (3-7) not completed (0)		
	Management performance	5	Complete as planned (5) partially completed (3) not completed (0)		
	Extracurricular other work achievements	3	Complete as planned (3) partially completed (2) not completed (0)		
	Achievements in social work	2	Complete as planned (2) partially completed (1) not completed (0)		

Note:If there is no such work in the plan, the score will be shared in the first level index

The evaluation index system of teachers' teaching performance includes four first-class indicators: Teachers' ethics and style, teaching workload, teaching effect, teaching reform and research. Each level index has several secondary indicators and main observation points. The calculation formula of teachers' teaching performance score is $s = s_1 + s_2 + s_3$, where s is the total score of teachers' teaching performance, and S_1 is the score of teaching workload, $S_1 = s_{11} + s_{12}$; s_2 is the score of teaching effect, $s_2 = s_{21} + s_{22}$; s_3 is the score of teaching reform and research, $s_3 = s_{31} + s_{32}$.

Table 7 Self evaluation form of teachers' work performance evaluation in YX University
Quantitative table of teachers' teaching performance ($s = s1 + s2 + s3$)

class a index	Secondary indicators	Main observation points	computing method
1, Teachers' morality and style	Professional ethics		The one vote veto system shall be implemented in case of any behavior that damages the interests of the state, schools, students and teachers' professional reputation, and causes adverse effects.
2, Teaching workload S135 points	1.1 Course teaching S11 (full score of 25)	Theory Course (practice course)	S11 calculated the total class hours of various teaching links according to "Zhejiang Yuexiu foreign languages college teaching workload accounting method". The teaching workload per capita of College (Department) teachers is regarded as the standard teaching workload of the Department, and the score is 100. Teaching workload per capita = total teaching workload / total number of full-time teachers and double shouldered teachers.
	1.2 Other teaching S12 (Full Score: 10)	social practice Student competition Community guidance Sports training	Each college (Department) formulates plans and calculates the workload separately.
3, Teaching effect S2 40 points	2.1 Teaching quality s21 (Full Score: 30)	Students' evaluation of teaching College evaluation of teaching	According to s21= student evaluation score * 0.7 + college evaluation score * 0.3.
	2.2 Teaching work and guiding students' rewards and punishments S22 (Full Score: 10)	Teaching Achievement Award	National level: first prize 100 points, second prize 80 points
			Provincial level: first prize 70 points, second prize 60 points
			Municipal level: first prize 40 points, second prize 30 points
			School level: first prize 20 points, second prize 10 points
		prominent teacher	National level: 10 points, provincial level: 6 points, municipal level: 4 points, school level: 2 points
		Famous teacher	National level: 10 points, provincial level: 6 points, municipal level: 4 points, school level: 2 points
		A rising star in the teaching world	National level: 8 points, provincial level: 5 points, municipal level: 3 points, school level: 1 point
		Prize winning of teaching skills competition (courseware teaching plan and other teaching basic skills competition, etc.)	National level: 10 points for the first prize, 8 points for the second prize, and 6 points for the third prize (if there is no award in the competition, the teacher who wins the prize will be counted as 8 points)
			Provincial level: 6 points for the first prize, 5 points for the second prize, and 4 points for the third prize (if no prize is given in the competition, 5 points shall be taken for the awarded teachers)
			Municipal level: 4 points for the first prize, 3 points for the second prize, and 2 points for the third prize (if there is no prize in the competition, the teacher who wins the prize will be counted as 3 points)
			School level: 2 points for the first prize, 1 point for the second prize and 0.5 points for the third prize
		Guide students to compete in class A (half of class B)	National level: first prize 10 points, second prize 8 points, third prize 6 points
			Provincial level: 6 points for the first prize, 5 points for the second prize and 4 points for the third prize
			Municipal level: 4 points for the first prize, 3 points for the second prize and 2 points for the third prize
		Guiding students' scientific research projects	Published academic papers (students as the first author) of first-class academic journals 10 points / article, core journals 6 points / article, general journals 1 point / article

4、Teaching reform and research S3 25 points			Project approval: national level: 2 points / project provincial level: 1.5 points / Project City level: 1 point / project school level: 0.5 point / Project Conclusion: national level: 2 points / project provincial level: 1.5 points / Project City level: 1 point / project school level: 0.5 point / Project
		Mistakes and accidents	3 points / time for grade 3 teaching accidents and 1 point / time for teaching errors.
			In school teaching inspection (including lectures, graduation thesis (Design), examination papers, etc.) is called and criticized: 1 point / time will be deducted
	3.1 Teaching construction S31 (full score of 15)	Specialty construction	National level: 100 points / year; provincial level: 60 points / year; City level: 40 points / year; school level: 20 points / year
		Curriculum construction	National level: 100 points / year; provincial level: 40 points / year City level: 20 points / year; school level: 10 points / year
		Textbook construction	National level: 50 points for project approval and 50 points for publication
			Provincial level: 20 points for project approval and 20 points for publication
			Municipal level: 10 points for project approval and 10 points for publication
			School level: 5 points for project approval and 5 points for publication
		Construction of teaching laboratory (base)	National level: 100 points / year, provincial level: 60 points / year, city level: 40 points / year
		Innovative Experimental Zone for talent cultivation	National level: 100 points / year, provincial level: 60 points / year, city level: 40 points / year
		Teaching team building	National level: 100 points / year, provincial level: 60 points / year, city level: 40 points / year
	3.2 Educational reform and scientific research S32 (Full Score: 10)	research project (including education reform)	National level: 50 points for project approval and 50 points for conclusion
			Provincial and ministerial level: 20 points for project approval and 20 points for conclusion
			Municipal Department Level: 10 points for project approval and 10 points for conclusion
			School level: 5 points for project approval and 5 points for conclusion
			Horizontal topics: 1 point for account receipt of 20000 yuan or less, 20000-50000 points for receipt, 50000-100000 yuan for receipt, 100000-200000 yuan for receipt, 200000-500000 yuan for receipt, 30 points for 500000-1 million yuan for receipt, and 40 points for 1 million yuan and above.
		Research papers (including education reform)	First level academic journals 10 points / article, core journals 6 points / article, general journals 1 point / article

From the above two tables, it can be seen that the current index system design combines subjective and objective, the proportion of subjective judgment is still quite high in some colleges and universities, and the objectivity, fairness, science and rationality of the index system design still need to be strengthened.

5. The methods of performance appraisal for teachers in application-oriented universities

5.1 Methods of performance appraisal for teachers in Application-oriented Universities

Nowadays, the extensive attention of all walks of life to the quality of higher education has made the evaluation of teachers heating up. People generally hope to start with the performance evaluation of teachers and ensure the quality of education by improving the efficiency and quality of teachers. However, our country started late in this respect. Since 1980s, many American colleges and universities have established perfect evaluation system, formulated clear evaluation policies, and increasingly enriched evaluation methods. We can learn from foreign advanced assessment methods.

Objective and key results (OKR) is a management tool and method to define and track objectives and their completion. It was adopted by Google in 1999, and used and promoted by many domestic

companies in 2015, which has attracted the attention of the education sector in recent years. The 3S performance appraisal system put forward by Shixin Zhang and others is based on the OKR assessment, which puts forward three evaluation directions of "culture", "result" and "process". Compared with KPI assessment, OKR assessment has subjective initiative. OKR is "what I want to do", and KPI is "what I want to do". The idea of OKR is to set goals first, then define the required results according to the objectives, quantify the results and complete the assessment.

5.2 Steps of teachers′ performance evaluation in Application‑oriented Universities Based on OKR

6.2.1. Formulate the strategic objectives of the school and develop the Balanced Scorecard

The uncertainty of the external environment in the era of big data puts forward higher requirements for the strategic objectives of application-oriented universities. The OKR assessment of universities must be combined with the overall strategy of the University, so as to avoid the construction of teaching staff deviating from the track of strategic objectives of the University. Before OKR assessment, the strategic objectives are decoded into strategic map and balanced scorecard, so as to further clarify the school's annual goals.

6.2.2. Decompose department level objectives and clarify the key performance of each objective

Using the value tree model, the objectives and indicators of strategic map and balanced scorecard are decomposed into each department of the school to form the objectives of each department. The objectives of each department must comply with the principles of SMART(specific, measurable, attachable, relevant and time bound), and discuss the key performance supporting the realization of objectives respectively. It is worth noting that the OKR assessment method emphasizes that grass-roots teachers should participate in the strategic decision-making of the college and mobilize the enthusiasm of grass-roots teachers.

6.2.3. Decompose the objectives to the grassroots teacher level and clarify the key performance of each goal

The work goal of grass-roots teachers is the same as that of department level, and it also needs to conform to the SMART principle. Usually, the assessment is carried out from the four dimensions of "morality, ability, performance and efficiency". First of all, OKR performance appraisal takes abstract "ideological work" into the category of teacher performance appraisal. It is necessary to transform the content of ideological assessment into concrete evaluation criteria. We can use the scale and comparison method to quantify the indicators of "teacher's ethics and style", such as the concept of organization, the concept of discipline and other evaluation elements, in order to meet the measurable principle of smart. Secondly, the main contents of OKR assessment are "teaching work, research work and service work". The key performance indicators can be transformed into measurable unit indicators by formulating relevant documents of teacher management and refining management documents. For example, teaching workload is divided into curriculum teaching and other teaching, and other teaching is decomposed into social practice, student competition, community guidance, sports and art training, etc. The weight of different parts is represented in the form of integral, so as to change the current situation that grass-roots teachers only pay attention to the formal learning in the classroom and ignore the informal learning after class. At the level of educational reform and scientific research, there are many types and different levels of scientific research achievements. In order to measure the value of achievements more scientifically and fairly, we should not only identify the quantitative dimension of scientific research quantity, but also identify the invisible quality dimensions such as achievement level and research difficulty.

6.2.4. Regular review of OKR assessment process and evaluation of assessment results

The examination time of application-oriented universities is usually limited to semester or academic year. The evaluation and feedback of OKR assessment results of teaching units and teachers is the last link and the most important step in the whole assessment process. Regular review of the assessment process is mainly to ensure that the evaluation process is scientific and reasonable and the evaluation results are fair and fair. The feedback of assessment results needs to pay attention to the

specific ways and methods of feedback, clarify the performance gap between individual teachers, and help teachers formulate their goals and adjust their working methods in the next assessment cycle.

5.3 Supplement of performance appraisal methods for teachers in Application-oriented Universities

In addition to the above-mentioned OKR assessment steps, the performance evaluation of application-oriented university teachers can also use SPSS and other statistical methods.

The application-oriented universities in the performance evaluation of teachers using SPSS software can play a multiplier effect. In the process of evaluation, teachers' performance should be graded and graded. The cluster analysis in SPSS can clearly and easily display the assessment results,

The research and discussion of this paper mainly focuses on the current situation and problems, objectives, index system and assessment methods of teachers' performance evaluation system in application-oriented universities

(1) This paper expounds the importance of establishing the performance appraisal of teachers in application-oriented universities, and presents the necessity and inevitability of the construction.

(2) This paper expounds the author's understanding and Consideration on the construction of performance appraisal system for teachers in application-oriented universities, and puts forward a comprehensive performance appraisal system.

(3)This paper makes a clear and detailed introduction to the theoretical difficulties and obstacles existing in the current performance appraisal field, shows the existing difficulties in front of people, provides the direction of thinking, and strengthens the guiding role of theoretical research and practical operation.

(4) In the aspect of how to improve the performance appraisal of application-oriented university teachers, this paper puts forward some targeted countermeasures, trying to approach the objective reality and narrowing the gap between theory and practice.

But at the same time, there are still many problems to be solved. It is reflected in the following aspects:

(1)The establishment of a comprehensive performance appraisal system is the core issue of the study. Although the writing intention of the paper is clear, it does not clearly explain the internal relationship of various performance appraisal measures, nor solve the problem of the relationship between the measures and theory. It only builds a preliminary macro framework, and the real system has not been completed.

(2) It has not been able to outline the structure of the components of the performance appraisal system of Application-oriented Undergraduate Colleges and universities, and has not reflected the corresponding position and value weight image of each performance appraisal measure. Therefore, it is difficult to put their respective positions in the implementation process, properly balance and handle various complicated relationships.

(3) We have a clear understanding of the problems existing in the performance appraisal of teachers in Application-oriented Universities in China, and put forward some pertinent opinions and solutions. However, the internal relationship of all the problems has not been elaborated, and the countermeasures proposed also have their own problems.

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