Research on the Construction of Informative OKR Performance Management System for University Teachers

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Abstract. Nowadays, informatization has been widely used. Especially, its combination with OKR performance appraisal greatly improves management efficiency. Performance assessment based on OKR starts from the teacher's inner drive, combines the development project and strategy of the institute and the secondary college with the individual's self-development and realization, which effectively mobilizes the enthusiasm and creativity of the teacher. This paper explores the theory and the practice of the collegian teachers' performance management, based on the concept of OKR informative construction principle, which applies Java, Processing and other visual performance management system. It makes a relatively accurate evaluation for teachers' performance and greatly improves the efficiency of performance management. Finally, it promotes the leap-forward development of colleges and universities.

Keywords: Performance Appraisal · Informative Management · Performance Management · OKR · Objectives and Key Results · University Teacher

1 Introduction

The famous management researcher Peter Drucker once said: Performance management is one of the greatest inventions in the 20th century. Performance is the effective yardstick and objective standard to evaluate all practical activities. The so-called performance management usually refers to the establishment of an incentive and constraint mechanism, the improvement of operation and management, and the realization of the overall strategic objectives by pre-setting evaluation indicators and evaluation criteria for the evaluated objects, inspecting, evaluating and rewarding the work of the evaluated object in a certain period of time [3].

Teachers are the core and endogenous driving force to promote the development and construction of colleges and universities. It is of great practical significance for the personal development of teachers and the future construction of colleges and universities how to effectively carry out the performance management of teachers and construct performance management system that conforms to the rule of teaching development and teacher growth in higher education.

The research on performance management of university teachers originated from the western management practice in the earlier time, and the "New Public Management Movement" rising around the world advocated introduction of performance management into the administrative activities of non-profit organizations. The United States and the United Kingdom took the lead in introducing performance management system in teachers management [4]. The large-scale education reform in the United States in the 1970s further promoted the development of the teachers performance management.

The research on teachers performance management in China, especially in colleges and universities, started relatively late. In 1972, Li Congming published *Theory and Methods of Educational Evaluation,* in which the concept of teachers evaluation was put forward, which was the first time that the concept of "teachers evaluation" was put forward in China. Su Weichang, a famous educator, also mentioned teacher performance evaluation methods in his book *Educational Evaluation Technology* [6].

In recent years, some progress has been made on the theoretical and practical aspects of performance management of university teachers, but the research findings have not been closely combined with the characteristics of university teachers and the practical studies are relatively inadequate, especially those of the research of art university teachers. The representative and up-to-date management pattern has not been formed.

2 The Origin and Characteristics of OKR

2.1 The Origin of OKR

OKR, namely, the objectives and key results, is evolved on the basis of theory of Objective Management put forward by the father of modern management Peter Drucker. Andrew S. Grove, the former CEO of Intel Corporation, developed the objective management into a management by objective system including goals and their key achievements, which helped Intel Corporation to achieve great success. In 1999, venture capital investor John Doerr brought Intel's objective management to Google, where the management tool was known as OKR that is used up to now [1].

2.2 Key Features of OKR

2.2.1 Inspiration

OKR emphasizes the motivation of employees, and plays a prominent role in stimulating employees' potential and the enterprise vitality, strengthening strategic execution, focusing on key breakthroughs, quickly responding to environmental changes, and enhancing enterprise development ability. It is a set of management tools and methods to clarify and track goals and their completion [5]. To apply OKR to performance management of the art collegian teachers, based on the analysis of the task and the performance management problems, is to decompose the college teachers performance target into key results (KRs), in order to effectively use goals to drive and guide the performance management. Finally it improves the core competitiveness by focusing on target to promote teachers' comprehensive development of the whole process.

2.2.2 Transparency

OKR is a objective management system, with clear performance objectives and indicators and strong comparability, corresponding to each position. In the OKR system, even the junior employee may clearly view his goal. Thus, goals are compared and corrected by everyone from the junior staff to the most senior leaders.

The main goal of OKR is the work results. Instead of listing all the actions, the key results (KRs) only need to be simply and clearly written in positive language for the key items based on the results rather than the tasks. After determining the OKR, the organizer needs to score OKR according to certain period (week, month, quarter or year), to determine the progress of the work is done. The score may be like: excellent performance (more satisfactory than expected, 85–100 points), good performance (able to complete, 65–85), qualified performance (need help to fulfil, 60–65 points), unqualified performance (less progress, 0–59).

2.2.3 Synergy

In the OKR system, employees can be highly collaborative. Leaders can break the top goal into pieces, integrate the resources of the entire organization, and make them work together. Based on the main goal, the leader breaks down the task layer by layer and integrates performance indicators. Leaders and employees relate their daily work to the vision of the organization. Everyone is involved in a system that they work as a whole and achieve goals logically, efficiently and powerfully.

3 The Necessity to Implement Informative Management

3.1 Informatization Effectively Fulfills the Concept of OKR Performance Management

Any management concept must be transformed into concrete management behavior before it is implemented, and this transformation process must rely on the system construction at four levels: mechanism, system, process and technology [7]. The same is true for OKR performance management. Informatization construction can ensure the implementation of OKR performance management in terms of process and technology.

3.2 Informatization Reduces the Cost of Performance Management and Improves Efficiency

In traditional performance management, most of the work completes artificially. The workload of performance management process is heavy, and the accuracy is difficult to guarantee. The information system of performance management can set the OKR of each assessment subject and evaluate the assessment object. After the evaluation, all kinds of data are automatically stored in the server, and the calculation, statistical summary and sorting are automatically completed. The system can also view the progress of performance appraisal work, the completion of the situation, and the unfinished situation to remind. The whole management process can be presented to the user through visual means and the result is clearer. It reduces the management cost and improves the working efficiency.

3.3 Informatization Reduces Human Factors in Performance Management

In the process of performance management, it is hard to avoid the human factors like "greeting", which will affect the fairness of performance appraisal. Occasionally, experts give "emotional points" in the assessment process because of "greeting" from the relative. While, the performance management informationization based on OKR systematically reflects the assessment objectives, so that all employees know their OKR, so as to effectively reduce the human factors in performance management and make the performance appraisal fairer.

3.4 Informatization Coordinates All Kinds of Resources and Reduce the Burden on Teachers

Performance management informatization obtains data from various sources of educational administration, scientific research, disciplines, personnel and other schools. The data obtained can be directly used as one of the basis of teacher performance appraisal, which can greatly reduce the burden of the assessed individuals for filling the tables or obtaining data. In addition, it in turn improves the data quality, thus promoting management level.

4 Process of Formulating OKR in the University

The formulation process of OKR generally involves five steps: the formulation of goals and key results, refinement of goals and key results, identification of dependencies, submission to superiors for approval and final release [2], and the specific steps are as follows:

- Formulation of the Goal and the Key Result: To develop a OKR draft in a variety of ways, specifically, to set 2–4 goals and draft 3–5 challenging key outcomes.
- Glue Refinement of the Goal and the Key Result: To present the OKR draft to the entire team, review the first draft of the OKR in a workshop, and let the staff who drafted the draft to explain the OKR items, and then spark discussion, and finally reach an agree on the OKR.
- Alignment: To identify dependencies and jointly define the key result. This process is to solicit opinions, to unify the various thoughts, to examine the tables of criteria. This process requires to align the top and bottom to make sure the team's OKR is aligned with the university's strategy and OKR. Also it requires to align horizontally, make sure to align the teams that you depend on and those that depend on you.
- Finalization and Submission: The formulated OKR is submitted to the superior for approval.
- Final Release: To communicate with the superiors for approval to implement the OKR.

Based on the above steps and combined with the actual situation of the art university, specific implementation procedures are formulated. This process takes the development goals of art universities as the core and combines the school's assessment requirements on teachers to formulate the coming year OKR at the end of each year.

This process is divided into two processes: organization and individual OKR development.

4.1   The Formulation of OKR by the Organization (The Secondary College)

According to the development strategy and the annual work plan of the university, the secondary college determines the OKR of its own level. At the same time, it puts forward the target value or achievement effect, which waits for approval by the leader in charge. The OKR of the department should support the goals and plans of the university and highlight the work focus of the department. After communication with the personnel department of the university, a consensus will be reached and submitted to the performance appraisal committee of the university, and the implementation is carried after the approval by relevant leading decision-making bodies such as the university executive committee or the standing committee of the Party Committee. Then, the college registers the information, makes fulfillment and waits for the verification of the standard during the examination.

4.2   The Formulation of Personal OKR

OKR is formulated by teachers according to the college OKR and the personal responsibility. Then the personal OKR is to be discussed and revised by the leader collectives and the teacher together, and to be noticed publicly, within the scope of the whole school, to make everyone understand, which reminds the teacher to focus on the core target in order to better realize the college OKR. After the registration of the information system by teachers, it will be implemented for benchmarking inspection during the examination.

5   The Construction and Implementation of Performance Evaluation System for Teachers in the University

5.1   Basic Framework of System Construction

Table 1 shows the content and standards of teachers' performance appraisal in secondary colleges according to different position type.

Table 1. Teachers Assessment Content and the Weight Ratio

Assessment Object	Assessment Content	Weight	Remark
Secondary College Leaders	secondary college OKR+individual OKR	80%	
	management ability	20%	To assess from 5 dimensions: moral words and deeds, professional ability, communication effect, guidance to subordinates and management strength
Secondary College Teachers	individual OKR	70%	
	work behavior and work attitude	30%	To assess from 5 dimensions: the sense of responsibility, work enthusiasm, cooperation spirit, discipline, learning and innovation

5.2 Appraisal Process

At the end of the appraisal period, all faculty and staff shall, in accordance with the initial objectives and key results (OKR), are evaluated by their direct superiors (or their departments) in terms of their work performance and ability or performance in the appraisal period.

5.3 Determination of Appraisal Grade and Score

Taking the distribution the assessment grade of the department leaders as an example: the assessment result of the department appraisal accounts for 80%, and that of the personal management ability accounts for 20%. And the number of people whose assessment result is excellent shall not exceed 20% of the total number. The distribution of teachers' appraisal results can be determined according to the appraisal results of departments, as shown in Table 2.

5.4 Performance Appraisal and Feedback

After each performance evaluation, the direct supervisor shall have interview with the faculty and the staff, inform them of the evaluation results, confirm the results, point out the deficiencies, put forward suggestions and suggestions for improvement, and confirm the assessment content of the next period. After each performance evaluation, the faculty and the staff whose assessment results are grade C and D, should have a performance interview with the superiors at the higher level.

Table 2. Teachers Performance Appraisal Grade

Appraisal Results of the Secondary College		Grade A (Excellent)	Grade B (Qualified)	Grade C (Basically Qualified)	Grade D (Unqualified)
Distribution of the Department Members Score	A (excellent)	≤25%	≤20%	≤5%	0
	B (Qualified) Above	≤100%	≤100%	≤90%	≤80%
	C (Basically Qualification)	undetermined		≥10%	≥20%
	D (Unqualified)				

5.5 Application of Performance Appraisal Results

- To adjust the salary and to determine the annual performance salary of the staff.
- According to the results of the performance evaluation, the posts of the staff should be adjusted, including promotion, job training, post transfer and lower employment.
- To clarify the training objectives and direction of the staff according to the evaluation results, and to implement the training and career planning in a targeted method.

6 Research and Development of Visual Performance Appraisal Information System Based on OKR

The visual OKR performance management information system which is developed based on the above performance management system is applied in Windows 7 (and above) operation systems. It operates with development language of Java, supports Linux and Windows. Its E9 version supports the deployment of home-made operating system, whose server is IIS (Internet Information Service, Internet Information Service) and database uses SQL Server and Oracle database (version 9.0 supports MySQL database). Its visualization part uses Processing for programming. The system framework is as follows (See Fig. 1.).

This system can read data from multiple data sources, build an assessment database and store all kinds of assessment data. Its multiple data sources include but are not limited to the database of the school data center, the existing educational administration system database, the scientific research information system database, the discipline and personnel information system database, and the user input information. It supports the query and summary of all kinds of users, as well as the data statistics and the analysis. The system can also realize a visual statistical chart and an early warning mechanism, dynamically display the KRS completion status and comprehensive ranking of teachers in each department, and give early warning to the unfinished work within the prescribed time limit.
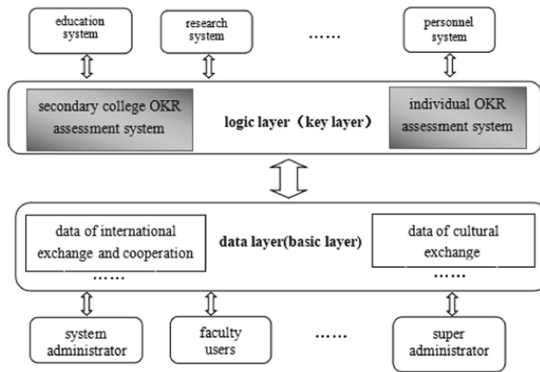
Fig. 1. Visual Performance Appraisal Information System Framework

7   Conclusion

The construction of performance appraisal and evaluation system for teachers in the art university starts from the internal drive of the staff, combine the development strategies of the university and the secondary college, and is based on OKR. On the one hand, we can fully develop the characteristics of teachers. And on the basis of respecting the personal development, we can formulate individual key tasks around the OKR of the college, so as to be people-oriented. On the other hand, the university may also make differences in their OKR according to the development status of their own. For the secondary college with a better foundation or the unit with a weaker one, the differences should be properly considered in the formulation of assessment tasks, to ensure fair competition between the two, and to encourage each department to exploit their advantages to the full and make greater contributions to the development of the university.

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