

The Research of Quantitative Management in the Teaching Process Management

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ABSTRACT. As an important part of modern education, the teaching status and quality have become the focus of people's attention in the new period. With the implementation of education reform, carrying out the scientific development concept deeply and optimizing the teaching management mode of private colleges and universities have become the welcoming trend of the reform of private colleges and universities. The implementation of quantitative mode in teaching process can not only improve the teaching management level for private colleges and universities, but also help to improve the overall management level of it. Based on the concept definition and key content of quantitative management, this work analyzed the positive role of private colleges and universities. Taking the evaluation of teacher's teaching process management as an example, this work dug into the points for attention regarding the quantification principles, dimensional quantification, and systematic assessment, hoping to provide some references for the teaching management in private colleges and universities.

KEYWORDS: Private universities and colleges, Teaching process, Quantitative management, Application

1. Introduction

In the large class with more than 100 students, some students' inactive learning psychology will have a negative impact on teaching, and the classroom order is not easy to be controlled by the teachers. In order to strictly manage and create a better classroom environment, it is imperative for private colleges to strengthen the quantitative management in the teaching process. In the respect, the quantification of teaching process management is from the beginning of the semester to the end of the semester. Through a variety of assessment ways to assess students' achievements quantitatively, instructors should try to avoid subjective judgment on students. Through a series of reasonable quantitative indicators to evaluate students in all directions, it not only can reflect the reward for good students but also reflect the punishment for poor students, thus achieving a benign interaction between teachers and students. Besides enriching management connotation and innovating the way of management, quantification in teaching process management also increases teachers' workload [1]. Therefore, in order to improve the management efficiency, it's necessary to build a software management system so that the innovation of management can combine with easy teaching perfectly.

2. The Concept of Quantitative Management Mode

Quantitative management is to study the motion state of things and their motion performance by digital methods. It makes a precise numerical description of the scale and development degree of things so that it can be controlled scientifically.

(1)The application of natural science research methods in quantitative management and the description of facts in precise language can transform the theories into technical principles and operating specifications, which have a clear color of regulation, mandatory and institutional. It is a kind of rigid management.

(2)The application of quantitative management to teaching management pursues rigid principles and the rules and regulations need to be strictly followed when people do business in teaching management. It should also try to avoid the infection of human factors in the management process. On the other hand, instructors shouldn't interfere much with people's thoughts, emotions and will, and try their best to be just and stern and not to mix any personal emotions, and finally pursue practicality and objectivity in management work.

3. The Assessment Principles of Quantitative Management

(1)Adhere to the principle of combining guidance and systematization. Through constructing dynamic quantitative evaluation index of teaching process, it can meet the demands of development plans and key work of private colleges and universities besides completing a series of work which includes the related teaching plans, teaching organization, teaching execution, teaching evaluation and other work. However, it is also necessary to formulate the corresponding management objectives and management programme for each professional teaching and research office and each instructor to guide their teaching behavior, thus realizing instructors' self-restraint, self-control, self-organization, and self-realization [2]. Consequently, it can get the department teaching management on a scientific, systematic and standardized developing track in the end.

(2)Adhere to the principle of combining the full staff with the whole process. The teaching management of the departments involves all the members of the teaching process of the private colleges and universities. The managers, teachers, and students are all included. In addition, the content of teaching management involves the whole teaching process, such as teaching plan, teaching organization, teaching command, teaching coordination, and teaching control. Therefore, it is necessary to construct a variety of dynamic and quantitative evaluation indices of teaching process to supervise and control the whole teaching process.

(3)Adhere to the principle of combining fixed quality with fixed quantity. Due to the complexity of teaching management content, the indices used to evaluate teaching quality also have different properties. For example, some content may be evaluated with quantitative indices, while some content can only be evaluated with qualitative indices. As a result, when constructing the dynamic quantitative evaluation indexes of the teaching process, we should grasp the method of combining fixed quality and fixed quantity. Meanwhile, we should also include the ways and means of assessment in the management system, which will help a lot to the inspection, control, assessment, evaluation of the work and the effective operation of teaching work in department as well.

(4)Adhere to the principle of combining self-testability and comparability. The ultimate goal is not to achieve rewards and punishments for teachers in department's teaching management work. In this respect, it also includes the effect of incentives and competition. It can make the instructors grasp their and the other instructors' teaching work quality in time by constructing dynamic quantitative evaluation indices of teaching process scientifically. On the other hand, instructors can constantly adjust their teaching work so that they can constantly improve themselves and achieve good results eventually.

4. The Construction of Quantitative Management System

Teaching process management in private colleges is diversified. As far as the management objects are concerned, it includes teachers, students, schools and so on. In contrast, the management content involves systems, teaching, scientific research, and a series of parts. So the whole is relatively broad. This study process only starts from the management of teachers' teaching process and it analyzes the key elements and precautions in the teaching management of private colleges and universities under quantitative indices. The research contents are presented as follows.

4.1 The Evaluation Dimension

In the quantitative evaluation of the teaching process management of private colleges and universities, all subjects which are involved in the teaching process should be included in the instructor's evaluation system to form a three-dimensional evaluation quantitative system which contains teaching planning, teaching execution and teaching evaluation as the core [3].

(1)The main contents of the evaluation in the stage of teaching planning include: preparation of teaching plans in this semester, formulation of curriculum assessment plans, formulation of professional teaching and research activities, entry of teaching tasks in this semester and formulation of teaching materials' subscription plans and so forth. The specific evaluation indices are presented in Table 1.

Table 1 the Quantitative Indicators for the Teaching Planning Stage

Main Aspects	Specific Criterion
Teaching plans of semester	Failure to submit a paper or electronic version of the teaching plan at the prescribed time and 2 points are deducted for each item
	The way to name the teaching plan of electronic version does not meet the requirements and 1 point is deducted for each copy.
	The teaching plan does not conform to the template form prescribed by the school, 2 points are deducted for each
	The cover and contents of the teaching plan are filled out incorrectly, with 1 point

	deducted for each place.
	Failure to submit a paper or electronic version of the teaching plan at the prescribed time then 5 points are deducted every single time
	The semester teaching plans uploaded to the mailbox are summarized. After review, once the cumulative deduction points are 2 times greater than the number of courses and 5 points are deducted.
Course Examination Plan	Failure to submit the theory course examination plan within the prescribed time and 2 points are deducted each time.
	The required items for the theory course examination plan are incomplete and 1 point is deducted for each missing item.
	The contents of the examination plan of the theory course are filled in incorrectly then each place deducts 1 point.
	Failure to submit the theory course examination plan within the prescribed time then 5 points are deducted each time.
	The theory course examination plans uploaded to the mailbox are summarized. After review, once the cumulative deduction points are 2 times greater than the number of courses and 5 points are deducted.
Professional Teaching and Research Programme plan	Failure to submit the professional teaching and research programme plan within the prescribed time then 5 points are deducted each time.
	The planned time for teaching and research activities does not match the time stipulated by the Department and 1 point is deducted each time.
	The number of teaching and research activities is less than the school's regulations and 1 point is deducted for each less time.
	There are mistakes in the teaching and research activities plan then 1 point is deducted for each place
Entry of Semester Teaching Tasks	Failure to enter the semester teaching tasks into the school educational administration system within the prescribed time then 1 point is deducted for each less course.
	The teaching information of the course is incorrectly entered and 1 point is deducted for each place.
Textbook Subscription Plan	Failure to submit the textbook subscription plan within the specified time then 5 points are deducted each time.
	There are mistakes and omissions in the textbook subscription plan's filling and 1 point is deducted for each place.

(2)The main contents of the evaluation in the stage of teaching execution include: teaching preparation, student attendance, teaching plan's quality, homework correction, arrangement of course test, process assessment and teaching weekly diary filling and so on. Specific evaluation indices are presented in Table 2.

Table 2 Quantitative Indicators At the Stage of Teaching Execution

Main Aspects	Specific Contents
Homework	The number or content of assignments does not match the semester's teaching plan and 1 point is deducted for each place.
	The assignments is not corrected on time then 1 point is deducted for each time.
Course Quiz	During the mid-term teaching inspection, one test is not completed and 2 points are deducted for each time.
	During the end of the semester's teaching inspection, two tests are not completed and 5 points are deducted.
	During the regular teaching inspection, failure to submit the process assessment results registration form on time then 2 points are deducted for each course.
Process Assessment	The scores of the registration form for the process assessment are not handwritten and 1 point is deducted for each place.
	There is a lack of students' signatures in the process assessment results registration form and 1 point is deducted for each place.
	Failure to turn in the teaching weekly diary within the prescribed time and 1 point is deducted each time.
Teaching Weekly Diary	The file name of the electronic version of the teaching weekly diary is incorrect and 1 point is deducted for each copy.
	There are mistakes and omissions in the weekly teaching diary' s filling then 1 point is deducted for each place.

	Failure to turn in the teaching weekly diary within the prescribed time and 5 point is deducted for each time.
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(3)The main evaluation contents of the teaching assessment stage include: final examination paper's production, final examination supervision, examination paper correction, achievement management and other tasks, which are consistent with the traditional quantitative evaluation, so it will not be repeated here.

4.2 Evaluation Process

The process of quantitative evaluation should follow the corresponding work flow of teaching management and be organized and implemented by the teaching work office [4].

(1) Issue teaching inspection notices. The content of the inspection should be divided according to instructors and professional directors. Besides, the content should be as detailed as possible and list specific quality requirements.

(2) Instructors should complete their work according to the requirements earnestly and report to the professional director.

(3) The professional director mainly checks the working documents which are submitted by the instructors and the work materials that they should complete according to the requirements of the notice then uploads them to the designated mailbox within the specified time.

(4) The director of the teaching office receives the mail, then makes a final inspection of the submitted materials and gives feedback. For unqualified materials, it is required to be corrected within the specified time and resubmit. On the other side, relevant responsible teachers will be scored by the professional director or the director of the teaching office according to the dynamic quantitative evaluation indices and their score will be recorded in the “teaching dynamic quantitative evaluation system”.

(5) The paper and electronic materials which are fully qualified after checking will be bound and submitted to the academic affairs office and the teaching evaluation center by teaching secretary.

5. Summary

Establishing a scientific and reasonable teaching management system is a important guarantee for the survival and development of a school. It is necessary to carry out a scientific quantitative analysis of the teaching management and teaching quality of private colleges and universities, which is a necessary step in the teaching systems' application called “a comprehensive and integrated method from qualitative to quantitative”. Since the standardization of teaching management and the improvement of teaching quality are affected by many factors, such as internal factors (school, instructor quality, students, conditions, management, etc.), external factors (society, students' family, policies, systems, etc.), it is able to achieve the best results only by the reasonable quantitative management and control, which is the inevitable direction of education reform in modern private colleges and universities and the only way for the development of education in modern private colleges.

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