

The research and exploration about teaching reform based on The New Three Centers

----- PDCA management cycle method for reference

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Abstract. Based on the popularization of higher education , improving the quality of education has become a eternal theme of talents cultivation at colleges and universities. The thought of education will be an indispensable part during this process. This article focuses on the new three centers educational thought with referencing the PDCA management cycle method which is effective on total quality management.

Introduction

The educational thought of the new three centers appears to be a growing world trend for higher education. In the United States, the thought of new three centers has been developed more than 30 years. In recent years, it has been introduced to China and promoted in a few colleges and universities. Further more, the theses associated with the new three centers are rare. So using the quality management tools, exploring and researching the teaching reform to improve the quality of higher education is theoretical and practical significance through the new three centers.

THE New Three Centers

A. The connotation of three centers education thought

New three centers education thought is a new teaching method which is based on the American psychologist Bruner's cognitive theory .The "students, learning and learning effect" is the centers of this new education thought. First, taking the student as the center is based on the students' adoption characteristics to arrange the courses. Second, learning as the center is to use various means to learn. Teacher's lecture is just a part of this, and other means of learning should be strengthened. Third, learning effect as the center is emphasized the purpose of learning rather than the form of learning. New three centers is true according to the learning needs of the students , rather than according to the needs of the teachers' arrangement of courses and teaching object designs.

B. The formation cause of new three centers

Teachers, students, and the classroom teaching are the three basic elements of teaching, and the basic premise of effective teaching is the course arrangement. With the advancement of popularization of higher education, traditional courses generally refers to the discipline curriculum, and the type of course is also in constant change. Moreover, the classroom environment is changing. From the perspective of knowledge construction, in the new classroom environment and teaching activities, the roles of teachers' and students' have the new change. Students should be the main role of the new learning environment, the result of studying depends on the effect of the teachers, students and classroom system. In this case, the evolution of educational thought has become inevitable.

C. The Constructivism theory base of the new three centers

As one of important contemporary teaching theory, constructivism which is also known as structuralism is an important branch of cognitive psychology. In this theory ,the learners use the necessary learning resources with the help in a certain social background and obtain the knowledge through the meaning construction. Constructivism learning activities based on the learner as the center is in a real learning environment. It obviously increases the students learning interest and

learning motivation .In the whole process ,it encourages students critical thinking.Thus,providing individual learning styles to different students.Therefore, applying constructivism to the teaching has the positive meaning.

PDCA Cycle

A.Basic theory of the PDCA Cycle

PDCA Cycle, proposed by the American statistician Dr. Deming, is a logical program that can make any activities work effectively. PDCA Cycle was primitively used in the field of quality management, which reflects the laws of the quality management activities. It was later applied to many areas of management, and has achieved good results. The PDCA Cycle is formed from 4 stages: the first stage P (Plan) means from the definition of the problem to the plan of the action; the second stage is D (Do) meaning implementation of the action plan; the third stage C (Check) equals the assessment of the results; the fourth stage A (Act) stands for standardization and further promotion.

PDCA Cycle can make our thinking pattern and working-step more organized, systematic, visualized, and scientific. It has the following characteristics: large ring nests the small ring, while the small ring props up the large ring. They each promote the other, proceeding to the stair-rising of the whole PDCA Cycle. Whenever it completes a circle, the quality improves.“Fig. 1”

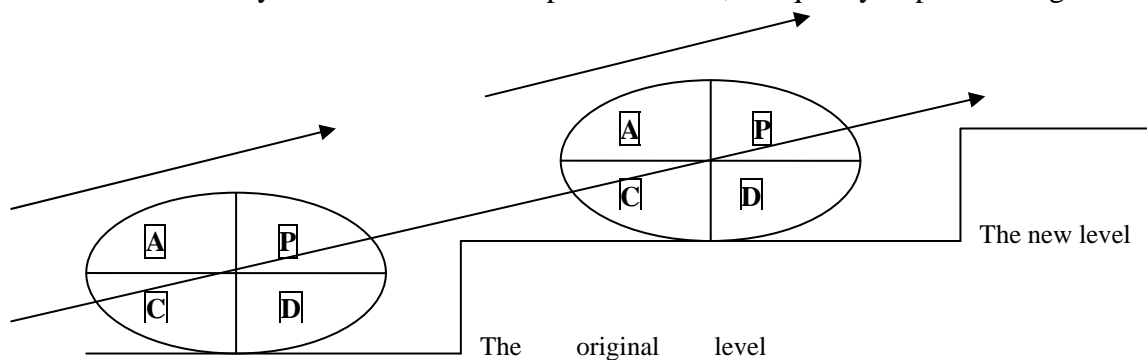


Figure 1. PDCA Cycle

B.PDCA Cycle in college teaching quality management

Teaching quality management is the plan, organize and control process of the effective output expected by the universities. It is mainly embodied in setting quality standards, decomposition and implementation, assessment of the implementation status (including examining, evaluation, feedback, and application of the results), and improvement. Its essence is to bring out the continuous improvement of teaching quality. Thus, the college teaching quality management process is a continuous circular and spiral loop. And this is exactly the main reason why the PDCA Cycle theory is effectively referred to and applied in college teaching quality management.

1)The teaching objectives formulation stage. This is the embodiment of the planning function of management in the teaching management. At this stage, first, is the recognition of the main problem, which could be system problem, the teachers, the students or the teaching procedure that affecting the teaching quality. Second, to improve the initiative and participation of students in the classroom learning, while the teaching reformation requiring the teachers to set the teaching activities student-centered, the curriculum arrangements need to be reorganized.

2)The process of the teaching activities. This is the main part of the teaching work. In this part, the teachers should teach the students according to their aptitude, realizing the function of the school to impart knowledge. Teachers are supposed to design a lesson, a learning topic or a chapter as a unit to launch the planning, implementation, observation, reflection and modification of the process. Sufficient communication should be made by the teachers to access the suggestions and opinions of the students.

3)Teaching evaluation. On one hand, the effects of student-centered teaching methods need to be evaluated. On the other hand, the implementation of the syllabus should also be evaluated. The effect of teaching methods can be reflected in each lesson. Departing from the original problem to

be solved of the project, such as the students' classroom participation or learning initiative, some certain conclusions can be drawn by observing the learning state in the classroom and homework completion after class.

4)Summarizing the outcome. Basing on the test results, analyze the specific practices of the teachers in the implementation of the plan and sum up the mature experience, which can be integrated into the standard rules and regulations, aiming at consolidating the achievements. Meanwhile, put the unresolved issues in the current round of PDCA Cycle into the next round to solve. The planning stage of the work of the next round is based on the summary and treatment of the previous round. By forming up such a closed loop, it keeps improving the quality of teaching.

The exploration of teaching reform under the new Three centers Education Thought

A.The design of the teaching content.

From a macro point of view, teachers should be familiar with the mission and target position of the school, and make their teaching behavior itself consistent with the teaching objective; From the medium point of view, versatility, rationality and flexibility are the key factors of the curriculum setting. In addition, on account of the existing differences in the students' personal qualities, interests and hobbies, professional orientation should be taken into consideration for courses refinement in the curriculum setting and further refine the job market. From the micro point of view,combing the relationship between the courses in line with the students' cognitive patterns and reducing the duplication, the students will be able to have more time to focus on their own development. The relationships between the theoretical courses and practical courses should be handled in proper manner to achieve the integration of the twos, fully broadening the time and space for students' consciousness, autonomy and freedom on learning their professional courses.

B.Diversification of teaching methods.

The new Three centers Education Thought attaches great importance to the process of knowledge acquisition. It is evident that the traditional teaching methods which rely solely on the classroom, blackboard or multimedia cannot allow the students to have a comprehensive and profound understanding of the knowledge. Therefore, it is essential for the comprehensive literacy education to positively cultivate the Six Teaching Methods, namely case study, project driving, problem orientation, simulation, competition promotion and digital platform. Psychologically, people's concentration for one time can at most be only a 12-minute. After 12 minutes, distraction comes. If the teachers don't have good approaches to mobilize the students, there will be the phenomenon of distraction. For example, a time period of 12 minutes can be set to organize the teaching. Make a conversion every 12 minutes, and it will really play the effectiveness of classroom teaching. Learning-centered equals to learn by all means. The ways of learning should be also strengthened, such as guiding the students to do good preparation, make use of the Internet and library, enhancing their social practice and so on.

C.Changes in the teaching evaluation.

Examination is a vital aspect in the college teaching management system. It is not only the assessment on student learning, but also the evaluation on the teachers' teaching quality as well as the management system. A scientific and rational mode of examination can stimulate the students' learning enthusiasm and timely have the feedback of the experience gained and shortcomings found in the teaching process. Otherwise, it will seriously affect the enthusiasm of the students, which is adverse to their training of ability and quality, having a counter-acting force or Backward Effects. It is shown in the research that there is a strong relationship between the exam tasks and the students' learning activities, and students will adopt various learning behaviors to manage different exam tasks.

D.Teaching reflection.

The focuses of this stage are: first, give full play to the roll of experts, which can be embodied in taking in-depth and detailed analysis in the form of special studies, summarizing and refining the successful experience scientifically for popularization and finally to achieve the purpose of improving teaching quality. Second, basing on the results obtained, further analyze the higher-level

question, reflecting the insatiable idea of the PDCA Cycle.

Protection measures of the new Threecenters Education Thought

A.School mission commands all teaching activities.

The mission statement should contain the views and opinions of the various stakeholders. It is only in the condition that the schools and teachers continuously exceed themselves, change their mental models towards the traditional education activities, establish a shared vision, develop group learning, and systematically think of the whole process of the teaching quality management that the school can become a learning organization and the learning activities of the students can be more effective.

B.Adequacy of the faculties.

The new Three centers confirmed the dominant position of student in teaching, thus student is put at a very outstanding place. However, on the aspect of running a school, teacher is still at the center. First, to ensure the high quality of the team, especially the quality of the main course teachers and the sense of service of the administrative staffs who support students' learning activities, the number of teachers must reach a certain proportion of the structure and they should have the appropriate academic and professional background for their quality. It is only under this circumstance that the high-quality curriculum can be provided. Second, ensure the full interaction between teachers and students, which is how the teachers give students the effective study guide in the five classes. Last, ongoing communication between school administrators and teachers must be produced in order to make the teaching plans and objectives feasible.

C.Students should have clear learning objectives and their own options.

The quality of the student enrollment groups will directly affect the education and training process. Thus the school's admissions policies and procedures must be consistent with the school's mission. In the meantime, schools should provide a good environment and resources to ensure that the students obtain a degree successfully, including full courses, the right to choose teachers and school hours. In addition, schools should have the consistent academic standards together with the targets, so that the students can have clear learning objectives and experience the responsibility of their own learning, and then ultimately achieve the good learning results.

The spirit and essence of the PDCA Cycle is being never satisfied with the current situation. Take PDCA Cycle for reference to think of the teaching reform under the new Three centers Education Thought in the colleges, the step-by-step improvement and the establishment of a self-discovery, self-improvement, self-development management culture have lie a good foundation for the construction of learning organization. However, this article did not do much study on the aspects of how to assess the effect of different teaching methods or how to define whether the students reach the training specifications. These are the lacks of this article and the follow-up studies are supposed to strive to perfect.

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