Study and Application of Quality Guarantee and Evaluation System for Colleges Based on Network

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Abstract

An innovative technique in quality guarantee system of Tianhua College is thoroughly discussed in this paper. On the basis of educational innovation through technologies, the guideline and significance of constructing *Quality Guarantee System* in Tianhua College are also illuminated. The framework and running mode of the *Quality Guarantee System* are described in details, and the main characteristics and innovations are analyzed and concluded as well.

Key Words

Quality Guarantee; Evaluation System; Development & Application; Based on Network; WAMP

Introduction

Former President Hu Jintao stressed in an important speech in Tsinghua University's one hundredth anniversary convention that continuously improving the quality of education is the lifeline of colleges and universities. Improving the quality of education is the core and thus should be the most urgent task of education reform and development. Present Hu Jintao's important speech is the guideline for us to construct quality guarantee system in colleges through the educational techniques.

With today's high-speed development of information, Tianhua College (Tianhua), relying on the college campus information platform and using web-oriented network and WAMP technique, constructs *quality guarantee system* (the system) full of its own characteristics. The system fully represents Tianhua's schooling concepts with the core of integrity and responsibility which is put forward by the board of directors, and is aimed to achieve the cultivation mode characterized by the coordinated development of "specialty, versatility and elegancy". Based on the

main points in *independent college education evaluation index system* and *college undergraduate teaching qualification assessment scheme* formulated by Ministry of Education, combining with Tianhua's schooling concept and closely keeping to theme of Tianhua's development, social reputation and campus harmony and stability, the *quality guarantee and evaluation system* is constructed with the teaching quality as the center and functioned as the link between each department.

The construction of Tianhua College *quality guarantee and evaluation system* is of great significance to Tianhua's schooling regulations and future development, which is shown as follows:

(1) It is one of the big innovations in Tianhua to explore the schooling model and positive development for independent colleges with Chinese characteristic socialist.

(2) It symbolizes that Tianhua is standardizing and lifting its schooling system to a higher level.

(3) It is an important move for Tianhua to promote education development and guarantee the good teaching quality through relying on advanced educational technology.

Description Of Tianhua Quality Guarantee And Evaluation System[1]

In order to guarantee the education quality of independent colleges, a whole set of strict schooling regulations should be laid down apart from the innovation in system. Meanwhile, the measures and methods should be workable during the implementation. Therefore, we put forward the research project named Study and Execution of Quality Guarantee and Network Evaluation System in

Independent Colleges. The main researches in the project focus on the 41 main points in *independent college education evaluation index system* and *college undergraduate teaching qualification assessment scheme* formulated by Ministry of Education, and combining with Tianhua's schooling concept and closely keeping to theme of Tianhua's development, social reputation and campus harmony and stability, the *quality guarantee and evaluation system* – Shanghai Normal University Tianhua College Quality Guarantee System (A) is constructed with the teaching quality as the center and functioned as the link between each department. The system (A) fully represents Tianhua's schooling concepts with the core of integrity and responsibility which is put forward by the board of directors, and is aimed to achieve the cultivation mode characterized by the coordinated development of "specialty, versatility and elegancy". It also includes a series of control points and control elements associated with schooling quality, all kinds of qualitative and quantitative standards as well as the corresponding supporting documents (various regulations).   It highlights the characteristics of development positioning, specialty skills orientation and cultivation scheme of work-study alternation for independent colleges.   Meanwhile, in light of the concept of enterprise quality management, we introduce the quality management system such as ISO and TQC, and based on the campus web information platform we further develop the web-oriented web evaluation system –Shanghai Normal University Tianhua College Quality Guarantee System (B). This system (B) can run in the form of information under the network environment on campus and implement the quality evaluation.   This can fully take advantage of the ubiquity of networks, and therefore all kinds of quantitative criteria and supporting documents can be accessed by login, query, statistics, publishing and evaluation. Hence, Quality Guarantee and Evaluation System are feasible and quantitative, which really put the quality guarantee and evaluation into execution and greatly improve the level of quality guarantee and evaluation.

The Structure and Framework of Web-Oriented Quality Guarantee and Evaluation System

It is believed that every university and college emphasizes its schooling quality and thus formulates various quality guarantee systems or regulations. If the systems and regulations are put aside or are only used for superior leaders' inspection, or the systems and regulations are not feasible and practicable, they end up being meaningless and useless. Therefore, it is very important that how and how well the quality guarantee system and regulations are implemented. Therefore, we particularly emphasize the practicability and feasibility of the system when we construct it, which can be achieved by the following four aspects.

(1) Self-evaluation   All the observation points, control points and control elements are quantified in the documents (regulations, supporting files, proof materials, responsibles, executive, inspector etc) created in the quality guarantee system.   The executives in each department conducts self-evaluation based on the control points and control elements and rates the evaluation results in the specific scale (A~F)

(2) Uploading   using the campus network as the information platform and network evaluation system as the link, quality responsibility in each department upload the self-evaluation results and all the relevant supporting documents and proof materials to the web server.

(3) Re-evaluation Quality inspectors from college administrative leadership, college party committee and quality guarantee committee re-evaluate each department using the 125 control points and control elements as reference, carefully verify the proof materials and re-rate each department with the specific scale (A~F)

(4) Aggregation In the background of the system, re-evaluation results are processed to weighted accumulation and aggregation, and all kinds of reports are produced. Finally the quality evaluation results for a particular year in Tianhua are generated, reported to the Board of Directors and posted in the college.

To achieve the above-mentioned four aspects, we construct Tianhua network quality evaluation system as shown in Fig. 1. The system, based on the Tianhua campus web informa-tion platform and supported by the cloudy technology, is a web-oriented dual architecture of C/S and B/S running in the Internet environment. It guarantees that superior leader-ship can browse and monitor teaching and administration at any time through metropolitan area network, and that each department can log on the system within the required time node to upload supporting documents and proof materials and modify evaluation rating.
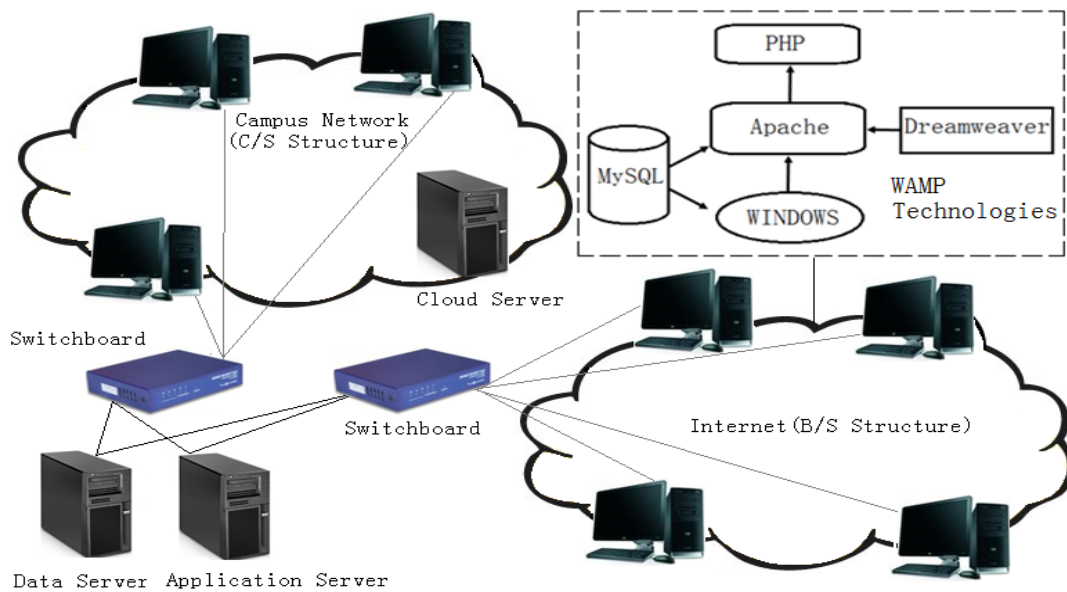
FIG. 1 TOPO STRUCTURE OF TIANHUA QUALITY GUARANTEE AND EVALUATION SYSTEM

From the software implementation perspective, by using campus network as the platform and referring to the current advanced network system development model, we construct a WAMP-based quality guarantee and evaluation system which can run on Tianhua campus network, can integrate with Tianhua's existing information platform and application system in the development and running model and can achieve seamless joint with existing Teaching Management Network System, Online Monitoring System of College Student's Growth Course and Document Processing System, and therefore can further enhance the whole level of education quality management in Tianhua. From the technique perspective, we use the data processing and data mining technology to solve the data flow management, bottom-up and top-down two-way transfer and data reuse. Meanwhile, we solve other technical issues such as virus infection, Hacker intrusion and data loss to guarantee the information security and smooth operation of the system.

WAMP here is the abbreviation of the first letter of Windows, Apache, My SQL and PHP, that is:

- Using Windows operating system as the development platform
- Using Apache to construct system sever
- Using the compact structure and flexible My SQL to be the system database
- Using advanced PHP technology for network programming[2]

The Application of Quality Guarantee and Evaluation System

After constant modifications and improvement

through trial operation, Tianhua Quality Guarantee and Evaluation System has integrated System A and System B into a mutual support system, that is, Shanghai Normal University Tianhua College Quality Guarantee System –A and Shanghai Normal University Tianhua College Quality Guarantee and Online Evaluation System – B. The construction of the system provides an efficient and information technology for the quality guarantee and evaluation in each department. After the construction of the system is accomplished, the system has been put into trail operation and software testing since October, 2012 and formally put into operation in 2013. Here we highlight the application and the function of the system.

The Operation Mode of the System

The cores of system A are the 125 control points and control elements which are the focuses for all departments to carry out work in Tianhua and are the important grasps of quality guarantee and monitoring. System B is the mapping of system A in the network virtual space. The corresponding relationship between the five modules (Teaching A1, Students A2, Administration A3, Administrative Logistics A4 and Party Construction A5) and each control point is shown in Fig. 2. The coupling relationship between System A and B can also be represented in Figure 3. In the figure, department is the X coordinate and control point is Y coordinate, and the intersection between X and Y coordinates is called the joint point which is the entrance to the quality evaluation system.
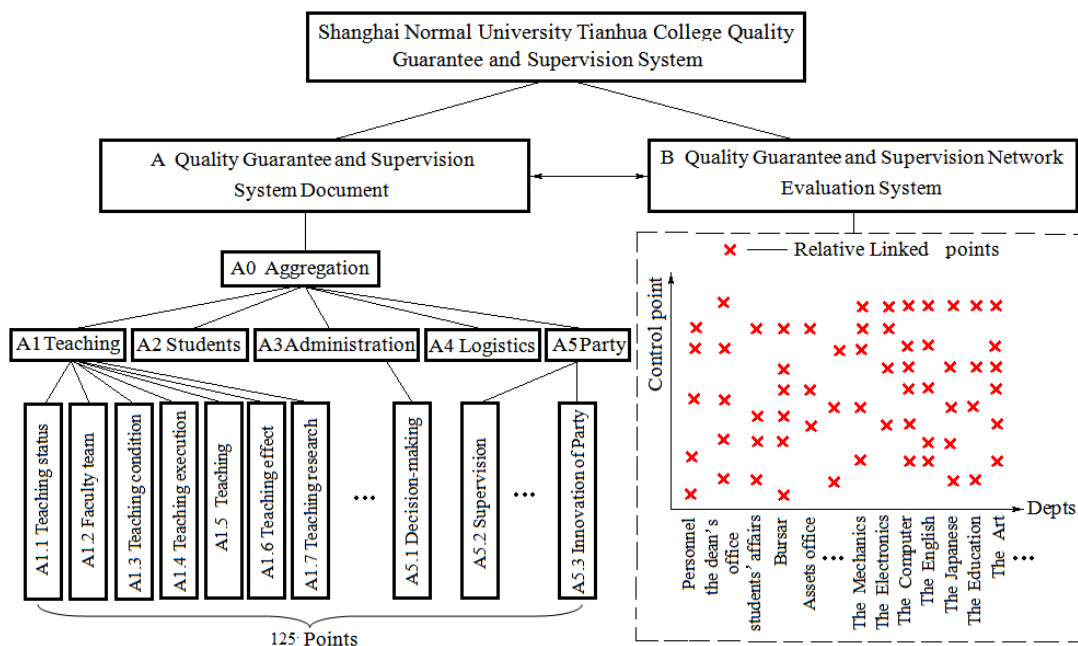
FIG. 2. THE OVERALL FRAMEWORK OF TIANHUA QUALITY GUARANTEE SYSTEM

The Interface and Application Process of the System

The main interface of the system is shown in figure 4. By simply clicking on the button of "部门测评"to enter the control point option interface, each department can conduct self-evaluation and upload support documents and proof materials. The results of self-evaluation and relevant materials are automatically saved in the database.

Inspectors or supervising officers can click on the button of"控制点浏览" in the main interface to check the self-evaluation results of each department, or to revise the scoring of some control points and control elements as shown in Fig. 3. The final evaluation result will be based on the scoring revised by the inspectors, which squares with the principle of democracy, centralism and justice.

College leaders and superior leadership can click on the A0 button to browse the quality situation of whole college. The system also has functions of background weighted calculation, cumulative scoring, aggregation and report output etc. We don't describe them in details here.

The Application Effect of the System

The application of the system greatly enhances the self-consciousness of the entire college staff members to place great importance to the quality, promoting a

vigorous atmosphere to value quality in Tianhua,[3,4]. The important instruction –"value quality, firmly grasped it" by Tianhua president is fully accepted among all the staff and becomes the focal points of all staff's attention. Some departments set up their own quality team and formulate their own detailed quality management rules; some departments improve their own quality regulations and detailed quality management rules and bind the rules to distribute to other departments, which greatly propels the quality management progress. Up to October 25, 2013, self-evaluation has been almost finished and college administrative executives, under the guidance of college party committee, have led the members in quality supervision committee and college administrative office to re-evaluate the self-evaluation results in the early November, 2013. After coordination and balance in the whole college, the final evaluation results derived from A0 module, the aggregation of the five modules A1~A5, are announced in the seminar of reserve cadres and above. Therefore, the whole process of the first evaluation (self-evaluation, re-evaluation and final evaluation) is successfully completed. The final evaluation results truly reflect the education quality level in Tianhua and achieve the desired effects. This fully demonstrates that using the information technology can propel the quality management to a more scientific and advanced level.

FIG. 3. THE MAIN INTERFACE AND CONTROL POINT OPTION

Conclusion

The construction of Tianhua Quality Guarantee and Evaluation System is an effective measure to improve education quality and guarantee teaching quality. The application of the system greatly enhances the self-consciousness of the entire college staff members to place great importance to the quality. The evaluation results of the system truly reflect the education quality level in Tianhua and achieve the desired effects.

These convincing data strongly demonstrate the fruitful achievements after paying special attention to teaching innovation, discipline construction and researches in Tianhua and fully represent the education characteristics in Tianhua.

The construction and application of the Quality Guarantee and Evaluation System shows the practical significance of relying on technologies to promote education, and mean-while fully demonstrate that using the information techno-logy can propel the quality management to a more scientific and advanced level.

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