

## Research Article

### Public Service System of the College Students' Physical Health Standards

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**Abstract:** This study optimizes the “college students’ physical health standard” assessment system based on the theory of human physiology. Under the use of “TOMCAT + JSP + SERVLET” computer technology, the physical health assessment and exercise prescription guidance system are established based on the theory. To use the dynamic pages technology and database technology, an interactive and personalized web platform is designed, so that the system has a public service function. The public service system is scientific and applied, which can offer a strong guarantee to the execution of “the college students’ physical health standard”.

**Keywords:** Health, public service, system

#### INTRODUCTION

To promote the healthy development of college students and encourage them to practice actively, Ministry of Education and State Sport General Administration established “college students’ physical health standard” (which evaluates college students’ health based on body figure, function, sports ability and so on) (Liu, 2006). However, still a lot of problems are waiting to be solved by physical workers after this standard has been published and put in practice. Concrete exhibitions are shown below:

- The result of standard estimation is shown in total score without specific comments on specific subject of entry, which disables undergraduates to practice, aimed at their own situation. Furthermore, this result ignores the practice tendency of undergraduates which will decrease some students’ activity and interest.
- The number of test samples based on the standard is too large and it is hard to manage the data. Especially, we cannot give the test feedback to students in time, which decreases the standard result’s function in supervision.
- The publish of standard and its health test does not change the intrinsic problems about undergraduates’ practice continuity and systematical range (in the frame of physical teach, most physical teachers cannot guide one student in a long time and in most cases, the instructions on students are duplicate and lack of coherence and systematic).

Based on the physical measurement and evaluation theory, the physical test data are sampled and analyzed

and the health standard evaluation system are optimized. The “TOMCAT + JSP + SERVLET” computer technology are used (Hong-Cai, 2001; Xiao-Man and Ping-Jin, 2001) and the undergraduate physical health evaluation and physical prescription system are established. This system covers students’ physical health evaluation test result, physical teach result, physical practice, physical prescription and self-interests and so on and it can also offer public and individual instant web-check, which will be able to offer strong guarantee of the scientific execution of the standard.

**Network platform architecture and physical prescription:** To solve the problem of huge test sample data and the difficulty of data management, this study firstly realized the SQL management of all students’ test data. So all date of students’ physical health test can be retrieved once the connection between the databases is established. For this function, a commutative and personalized network platform is designed and the connection between the databases based on the dynamic web technology is realized (Hong-Jun, 2000; Zhu-Lin, 2002).

Another problem is to deal with the test data. So the test data in these years are analyzed and then the evaluation of this system which makes it able to give scientific and specific comments on student physical figure, function, quality, ability and so on are optimized. It can also give specific prescription on improving the weakness. In addition, the movement of forms of exercise prescription, the timing, strength and formulation of load also consider students to submit favorite project, exercise time and exercise preferences, making the exercise prescription formulated more suitable for college students exercise habits to ensure

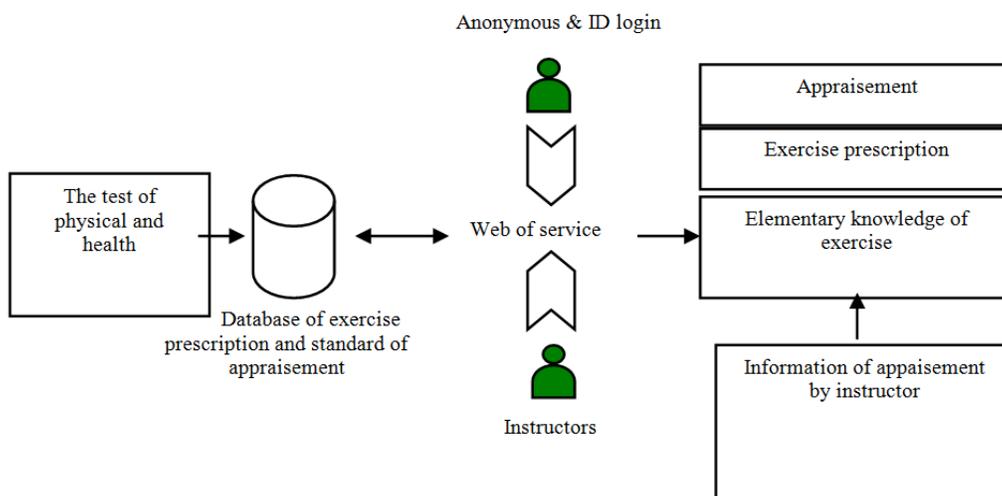


Fig. 1: Health assessment and exercise prescription guidance system

that physical exercise remained stable. Finally, TOMCAT + JSP + SERVLET computer technology to health assessment and exercise prescription kernel is embedded into the network platform, the development of the College Students' Physical health assessment and exercise prescription guidance system (Fig. 1).

**System application:** Sports Bureau organizes the physical test for students in the first and second year every year in the first semester and tests for students in the third and fourth year in the second semester and the test results will be saved into this database. Based on the standard and physical prescription, this system will deal with the data and give the score and evaluation on every subject for every student and offers the corresponding physical prescription.

Students can both login to see personal health evaluation and prescription using Student ID and login anonymously to type in the physical health data in real-time queries. Another thing is that after login by using student ID, the student can query basic information (average, maximum, minimum, standard deviation and so on) of all students and he is able to know his physical health level after comparison. At the same time, under the instruction of physical prescription, undergraduates will build good PE habits and the sense of self-practice, self-instruction, self-supervision and self-control. Since 2005, this system has provided services like data-query, evaluation and physical prescription to students in 2005, 2006 and 2007. The website has been browsed for tens of thousands and the practice activity of students is increased significantly. In addition, this system covers all relevant information

about students' physical health in continuous years, so it can provide continuous and systematically instruction to undergraduates.

After students get the prescription, they can practice by themselves in their free time. The PE professors can also get all students' physical health data in his class using this system (Fig. 1). So he could give specific instruction to his class. Since 2005, the badminton class, table tennis class, basketball class and so on have been all intervened based on the information from the system (like during the normal PE and specific practice, specific exercises to increase the aerobic capacity, Lower limb explosive power and physical flexibility are added), which got pretty good results. The tracking survey in five years shows that not only students' special skill are increased, but also the weakness and shortness in physical quality are decreased and fatness is also decreased significantly.

## CONCLUSION

This study designed a commutative and personalized network platform to solve the problems in managing the sample data and realized the data extract and the instant operation of interface based on the dynamic web and database technology. Based on the measurement and evaluation theory, undergraduates' health data in years are analyzed and then the health standard evaluation system is optimized and perfected, which makes this evaluation system be able to give scientific evaluation on physical figure, function, quality and capability of students and special PE practice prescription to improve the weakness and shortness. The undergraduate physical health evaluation system and prescription instruction system is created

based on the computer technology which uses TOMCAT + JSP + SERVLET technology embedding health evaluation and some prescription information into the web platform.

The system can offer all students' physical basic information and is easy for students to know their physical health levels by comparison. Based on this system, PE professors could give specific intervene to his class. At the same time, through the instruction of PE prescription, undergraduates build their good habits and sense of self-practice, self-instruct, self-supervision and self-control, which established a good base for their life-practice. Furthermore, this system covers students' physical health information across years, which would give continuous and systematical instruction to students' practice. In conclusion, the development of undergraduate physical health evaluation and prescription instruction system offers a strong guarantee to the scientific execution of "undergraduate physical health standard".

#### **ACKNOWLEDGMENT**

This study was supported by the program of Soft Science of Science and Technology department of Si

Chuan Province. (Grant number: 2012ZR0096 and TY2012206) And, the research received the grant from the funding of Laboratory and Equipment Management of SWJTU. And supported by the Fundamental Research Funds for the Central Universities, (grant number: SWJTU11BR121and 122).

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