Innovation Research on Ideological and Political Education of College Students Based on Yiban Network Platform

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Abstract: Yiban is a comprehensive interactive community that provides education, teaching, life service and cultural entertainment for college students. It is an important tool for students to learn and live. At present, in the context of the Internet era, Yiban is faced with certain challenges and opportunities. SQL Server 2014 is adopted for data storage. Based on java8 B/S architecture, HTML5 technology and integrated use of GPS and WiFi fingerprint positioning mode is used to develop the check-in software based on Yiban network platform. The software can be used for class roll call, conference check-in and late return check-in with positioning display function, and has the function of academic warning. By building the big data platform of Yiban University and applying big data analysis technology, this paper provides quantitative analysis basis for carrying out the ideological and political education of college students, so as to provide more accurate and effective education and service for students and improve the quality of ideological and political education of college students.

1. Introduction

The Internet has become an important part of the study and life of modern college students. The Internet has a far-reaching influence on the way of thinking, behavior mode, psychological development, values and political orientation of college students [1].Giving full play to the educational function of the network is the inevitable requirement of strengthening and improving the daily ideological and political education of college students under the new situation."Yiban", as an online interactive community under the new situation, is different from commercial websites. The research on it is a new issue to be discussed by the academic circle in the field of ideological and political education.

As an important channel for data collection of college students and teachers, yiban aims to provide college students with a healthy network platform that can show themselves, carry forward their personalities and communicate with each other. It mainly targets college students and teachers and integrates BBS, SNS, blog, microblog, mobile phone applications and other new Internet applications [2].Through this website, teachers and students can interact with each other online, exchange various information and resources, upload photos, write blogs and publish micro-blogs. For being active, skillfully use easy class network platform of college students in terms of big data about their way of thinking, learning method, behavior patterns, ideas, and so on has had a profound effect, also deep influence and changing the mode of ideological and political education and the way, to the current combination of easy class to carry out ideological and political education work brings new challenges and opportunities.

2. Yiban's challenge

1. As people step into the era of Internet community integrated platform, business application has a great impact on the promotion of yiban. This requires us to pay attention to the requirements of

Internet integrated platform and meet the functional requirements of users while carrying out the construction of yiban.

2. The rapid development of social network platforms and the lagging contradiction of the construction of yiban platform are another major challenge that yiban is facing [3].With the advance of The Times, the needs and behaviors of users are constantly changing. Relying solely on a certain application or a certain function can no longer occupy the market and maintain user stickiness. Therefore, the rapid development of social network platform and the lag contradiction of the construction of yiban platform are the great challenges that yiban is facing at present.

3. Campus yiban ecosphere and student social network have not been fully established in yiban platform. Yi ban requires students to register with their real names, which cannot interact with other network platforms, such as QQ, weibo, WeChat, etc., and is in the isolated island construction management. As the construction of yiban community has not been improved, and the benign interaction in which students actively participate in the content construction has not been formed, the entertainment function of yiban is relatively poor, and it is not sticky enough for users [4]. Many students have established network social relations on other network platforms before entering the university. It still needs a process to establish and form a network in yiban as a whole.

3. Opportunities for yiban

Relevant ministries and commissions of the state and competent education departments at all levels attach great importance to the construction of network culture and support the construction and development of yiban. All colleges and universities have responded to this, paying special attention to the network ideological and political education of college students. Yiban follows the trend and provides an effective platform for campus culture construction and student education management, showing certain development opportunities [5].

1. Yiban can effectively integrate campus data resources and focus on providing exclusive network platform for college students [6]. As an Internet product mainly promoted by the ministry of education, yiban is safe and reliable, which will not affect the management of colleges and universities, and can be supported and jointly developed by colleges and universities' own databases. Therefore, yiban can successfully create Internet community products that are vertically subdivided into university student groups, which is the core competitiveness and opportunity for the development of yiban.

2. Yiban provides the possibility to build the big data platform and education platform for online ideological and political education in colleges and universities. Yiban is a dedicated to college students' comprehensive network platform, is the platform, you can master it contains various functions related to student life and learning, students can completely in this platform to find them in most of the Internet use this group needs, it's for our analysis of student behavior and appeal, make education and timely service provides the tools and sources of support, it is easy to class is different from other platforms opportunities and vitality.

4. Development and application of check-in software based on yiban platform

With the expansion of college enrollment scale, college students' academic problems are increasingly prominent, and the difficulty of student management by counselors and teachers is also gradually increasing. Therefore, it is urgent to develop effective software to reduce the work burden of teachers. In view of the important role of check-in software, based on the e-class network platform to develop the check-in software, to help college teachers convenient and quick implementation of classroom attendance, conference check-in, dormitory late check-in and other functions.

4.1 Software research process

Adhere to the "people-oriented" concept of development, the student check-in software system for each module, each link and each function of the humanized development design, framework into the

education theory, management technology, big data thought as one of the student check-in software system, explore the new model of student management based on the information age big data. The research technology route is shown in figure 1.
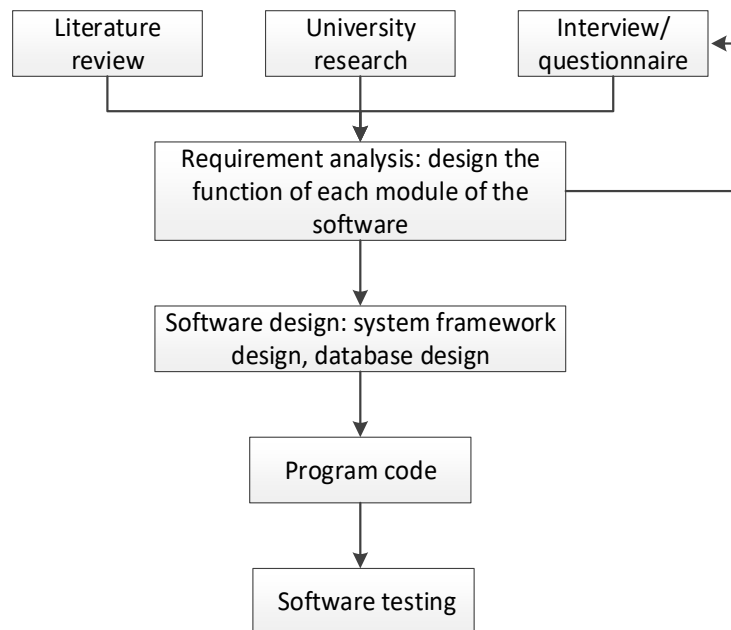
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│  Literature  │   │  University  │   │  Interview/  │
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         │ Software design: system framework   │
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Figure 1. Check-in software technology roadmap

4.2 Design and develop student check-in software

According to the requirements of software development functions, it is necessary to establish two parts of the database to meet the realization of software functions. One is the storage of information such as student name, student number, class, college, classroom and dormitory location. The second is to record the basic information of all the students who have checked in, as well as the check-in location, time and other information, according to which the system background is summarized to provide a basis for academic warning.

The software is divided into three major modules, including class roll call, activity meeting check-in and late return check-in of dormitory. It has a common background management platform, including: administrator list, role management, menu management, teacher setting check-in management, student check-in management, other data maintenance, data analysis and other modules.

4.3 Implementation of single sign-on

Yiban website open platform which can provide users with easy class account system, the relationship between system and share system and related interfaces, we through its API interface provided by the data interaction with sign in software, make teachers and students can APP from easy to go into the sign in software to check in, the first landing in software can through website to obtain authorization mechanism from easy class student name, student id, class, etc. This information, which can realize the function of free land, free to fill out basic information.

4.4 Optimization of positioning algorithm

In order to make this software better serve teachers and students, HTML5 technology [7] is adopted to comprehensively use GPS and WiFi fingerprint positioning mode [8-9], so that the check-in software can achieve more convenient and accurate positioning function.

4.4.1 GPS positioning technology

The mobile phone's built-in GPS positioning module is used for positioning. The principle is that the GPS chip constantly receives the positioning coordinate data transmitted by the satellite and

analyzes the data through the GPS module to obtain the coordinate position of the positioning target [10].

4.4.2 WiFi fingerprint positioning technology

RSSI fingerprint positioning system based on WiFi network can be divided into offline acquisition stage and online positioning stage. The indoor environment is simplified into information points that are easy to be quantified and calculated, and the coordinate position of the target is described according to the strength of WiFi signal [11].In this paper, the filtering fingerprint algorithm based on KNN algorithm is adopted, whose main purpose is to eliminate the points that are not closely related to the location of fingerprint points, so as to improve the operation efficiency of the algorithm [12].

The Euclidean distance between two RSSI signal strength points

$$D(R, r_j) = \sqrt{(RSSI_{ap1} - rssi_{ap1})^2 + (RSSI_{ap2} - rssi_{ap2})^2 + \cdots + (RSSI_{api} - rssi_{api})^2} \quad (1)$$

$R = (RSSI_{ap1}, RSSI_{ap2}, \ldots, RSSI_{api})$ represents the AP value measured at the registration point;

$r_j = (rssi_1, rssi_2, \ldots, rssi_i)$ represents the signal strength of the jTH fingerprint point;

According to formula (1), the Euclidean distance set between the reference point and the test point can be obtained, and the position coordinates of the positioning target can be solved by using the centroid geometry formula, i.e

$$\bar{L} = \frac{1}{K}\sum_{j=1}^{K} L_j \quad (2)$$

L_j for signal strength minimum Euclidean distance of a few reference points, for choosing the number of K, $\bar{L}$ said the location of the target coordinates.

4.5 positioning optimization and test result comparison

In order to ensure the accuracy of positioning, the center coordinates of all teaching buildings, dormitory buildings and other buildings in the campus were accurately measured and input into the software database. After obtaining the position coordinates of the positioning target through the above two positioning methods, the distance discrimination method was used to calculate the distance between the two positioning positions and the target position. According to the investigation and repeated calculation, 15m was finally determined to be the maximum acceptable distance for the target, and the distance less than 15m was determined to be the location of the student in the target building (teaching building and dormitory building), and beyond that, it was deemed not to be in.

According to the above principles, 10 tests were conducted randomly in and around the teaching building, dormitory building and library, and the software test accuracy rate reached 93.3%. The main reason for the positioning error is that the test point is located at the corner of the building. Due to the positioning accuracy error, the distance between the test point coordinate and the central coordinate of the target building is greater than 15m.

5. Conclusion

"Yiban" as the network under the background of exploration of higher school ideological and political education work important driving and practice carrier, although its own functions and advantages play remains to be further exploration, but we can not deny the fact that as the network ideological and political education research field which a new force in the historical significance and time value. Therefore, through field investigation and analysis of the status quo of "yiban" management in colleges and universities, this paper proposes relevant improvement measures based on the characteristics of the users of "yiban" and the management principles of "yiban", in an effort to promote the innovation of "yiban" management methods in colleges and universities and improve the effectiveness of ideological and political education for college students.

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