Role of Computer Technology in the Work of College Party Branches in the Information Age

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Abstract. The work of party branch in colleges and universities is an important part of our party's construction and an important part of building a harmonious campus. The purpose of this article is to research and analyze the role of computer technology in the work of college party branches in the information age. This paper proposes to use the classic algorithm FP-growth algorithm for digital technology problems commonly used in computer technology. The FP-growth algorithm has the widest application range. It compresses the transaction database into an FP tree for processing. It also uses the Apriori algorithm, which eliminates the need to generate candidate frequent itemsets, which improves the efficiency of use [1]. In addition, this article uses the two core technologies of computer technology, data mining technology and data fusion technology, and their use strengthens the research of computer technology in the work of college party branches in the information age. With the use of high-precision algorithm processing of computer technology, problems can be accurately found and solved in the work of the party branch. Through the high precision of the FP-growth algorithm and the Apriori algorithm, the computer can simulate the problems that will occur in the construction problem in the construction of college party branches and give solutions in advance [2]. The experimental results show that the application of computer technology in the work of party branches in colleges and universities in the information age explored in this article is more recognized and liked by party branch workers. The efficiency of party branch workers has increased by about 90%, which is helpful for improving party building efficiency. Played a significant role.

Keywords: Computer Technology, FP-growth Algorithm, Apriori Algorithm, Party Building Work

1. Introduction
The report of the 19th National Congress of the Communist Party of China pointed out that “the party’s self-building task is more onerous than ever in the past [3, 4]. The party’s leadership of reform
and opening up has not only injected tremendous vitality into the party, but also caused the party to face many unprecedented new tasks and tests. The development and changes of the conditions of the world, the country and the party have determined that it is very important and urgent to strengthen party building with the spirit of reform and innovation [5, 6]. The party’s governing capacity building and advanced nature building must be the main line. To train high-quality party members and cadres to focus on strengthening organizational construction", "We must firmly grasp the basic project of party member team building, and unremittingly improve the quality of party members", "improve the quality of party members and optimize the structure of party member". Wang Huning, member of the Standing Committee of the Political Bureau of the CPC Central Committee and secretary of the Secretariat of the Central Committee, pointed out at the 26th National College Party Branch Work Conference that we must thoroughly study and implement Xi Jinping’s new era of socialism with Chinese characteristics and the spirit of the National Education Conference, and fully implement the party’s education policy , Solidly promote party building and ideological and political work in colleges and universities, and provide a strong guarantee for cultivating socialist builders and successors with comprehensive development of moral, intellectual, physical, artistic and labor. The Twenty-Fifth National College Party Branch Work Conference regards "maintaining and developing the advanced nature of college party members" as an organic part of the two fundamental tasks of college party work. The meeting also pointed out that we must continue to develop party members among college students. Work [7, 8]. It can be seen that continuously strengthening and improving the work of college student party branches is a long-term and arduous basic project in the work of party branches.

Party branch work is an integral part of the key courses in the construction of party branches in colleges and universities. It has special purpose and strong comprehensive characteristics. It aims to cultivate both ideological and political skills, and the ability to master ideological morality and related professional basic theories And expertise can meet the needs of the country to train talents [9, 10]. Therefore, domestic and foreign scholars have different opinions on this. Domestic scholar Xu Chengjun believes that the work of party branches should focus on the practicality of communication, aiming to promote the ideological cultivation of party members [11]. The high degree of recognition by the majority of students of our party’s current line, guidelines, and policies has promoted the development of the work of college student party branches, which is very gratifying. But we must also see that there are still some obvious shortcomings in the work of college student party branches [12, 13]. Foreign scholar Yetisen A K believes that this traditional party building model is relatively backward in cultivating students' practical application ability, so it is difficult for the traditional party building model to cultivate qualified compound talents [14]. The project teaching method significantly improves students' practical ability, creative ability, and comprehensive ability, which is in line with the characteristics and needs of party and government building [15, 16].

This article hopes that through the implementation and application of computer technology in the work of college party branches in the information age, the work of college party branches can be completed well, and the learning of the party’s policies and guidelines will continue for a long time, and the learning confidence has also been greatly improved. Through data mining algorithms, we can find more ways to promote the development of ideology and politics, so that ideology and politics can make students feel that they have learned something. Cultivate more talents and promote the development of party building education in our country.

2. Technical Research of Computer Technology in the Work of University Party Branch in the Information Age

2.1. Algorithms for Mining Information Using Digital Technology under Computer Technology
In the information age, computer data mining is about finding all strong association rules in a source database, and strong association rules must meet the following conditions: The support is greater than or equal to the corresponding minimum support and the reliability is greater than or equal to the
corresponding minimum reliability. I have to meet, 
\[ \text{conf}(A \implies B) \geq \min_\text{conf} \] and 
\[ \text{Support}(A \cup B) \geq \min_\text{sup} , \] then \( A \implies B \). This mining process includes the following two steps:

1. Search for frequent itemset: To search for itemset whose support degree is not less than the specified support threshold, to obtain frequent itemset, it needs to scan the transaction source database. This is the main step of association rule data mining, according to the scope, target, and direction of the search data format, different search algorithms can be constructed [17, 18].

2. The generation of strong association rules: For any frequent item set \( L \), detect each non-empty subset \( X \) in it, and generate the rule \( L \implies L - X \), the corresponding support is recorded as \( \Pr(L) \), and the confidence is recorded as \( \Pr(L) / \Pr(X) \), delete those rules that do not meet the confidence level set by the user, and the rest are strong association rules.

Based on the nature of support calculation, the process can be simplified to find the largest subset of \( L \) first, and only when the confidence of its generation rule meets the conditions, other subsets are tested. For example \( L = \{A, B, C, D\} \), if the confidence of rule \( \{A, B, C\} \implies D \) does not reach the confidence threshold, then \( \{A, B\} \implies \{C, D\} \) also does not meet the confidence threshold (because of \( \Pr(\{A, B\}) \Pr(\{A, B, C\}) \)).

2.2. FP-growth Data Mining Algorithm

1. Data mining technology

Using data mining technology to deeply mine for item set \( X \), \( X \subseteq I \), the support degree of item set \( X \), the frequency of item set \( X \) appearing in \( D \), denoted as

\[ \text{Support}(X) = \frac{\text{count}(X \subseteq T)}{|D|} \]  

(1)

Where \( \text{count}(X \subseteq T) \) is the number of \( X \) contained in the transaction database \( D \).

Association rule \( R: X \implies Y \), the confidence of rule \( R \) refers to the ratio of the number of transactions where \( X \) and \( Y \) appear at the same time to the number of transactions that only appear, denoted as

\[ \text{confidence}(X \implies Y) = \frac{\text{Support}(X \cup Y)}{\text{Support}(X)} \]  

(2)

The credibility reflects the probability that \( Y \) appears in the transaction if \( X \) is included in the transaction. The minimum confidence threshold is denoted as \( \min_\text{conf} \).

2. Data Fusion Technology

Data fusion technology based on human information processing ability can acquire more resources by combining data, so it realizes cooperation of network information resources. Security technology allows multiple sensors to coordinate with each other and play an appropriate role during operation. This effectively improves the functionality of each sensor system, ensuring the integrity and accuracy of intrusion detection results.

The main problem that the fusion function solves is how and what algorithm the data will be fused. The simplest methods include the average method, the maximum (small) value method, and the intermediate value method. Of course, there are also more complex algorithms. It depends on the specific integration requirements. Assuming that there are \( n \) sensor nodes in a multi-sensor data fusion system, and their output data are \( X_1, X_2, \ldots, X_n \) respectively, then the fusion function of the system can be expressed as:

\[ F(X_1, X_2, \ldots, X_n) = y \]  

(3)
In the above formula, F represents the fusion function, and y represents the result of the data fusion of these n nodes. The fusion function should have the three properties of commutative and idempotent functions.

The tolerance function, as the name implies, describes the degree to which the data collected by two or more touch sensor nodes can be fused, which means the degree of similarity of the node data. The higher the similarity of the data, the closer the data is, the value of the tolerance function. The bigger it is. The value of the allowable function is specified in the interval [0,1]. When multiple data are waiting to be merged, the tolerance function is defined as follows:

\[ R : X \times X \times \ldots \times X \rightarrow [0,1] \]

\[ R(x_1, x_2, \ldots, x_n) = \min \{R(x_i, x_j)\} \]  \hspace{1cm} (5)

R represents the tolerance function, \( R(x_i, x_j) \) represents the tolerance result of two sensor nodes, and \( R(x_1, x_2, \ldots, x_n) \) represents the total tolerance result of the data of n sensor nodes. It can be seen that the tolerance of multiple sensor nodes value of is obtained by comparing the tolerances of the two-node data and then taking the minimum value. After analysis, the essence of the fast mining model is to save time and space complexity by dividing and sampling while sacrificing some accuracy, and then intercept a balance point between the two.

3. Experimental Research of Computer Technology in the Work of College Party Branches in the Information Age

3.1. Experimental Data
The research object of this article is to randomly select 800 college students in the same place, including 480 boys and 320 girls. Then divide them into two groups A and B. Group A is the experimental group and group B is the control group.

3.2. Experimental Process
First of all, this article randomly selected college students conducted a questionnaire survey to obtain the understanding, like, and cognition of the 400 college students on the research of computer technology ITW college party branches in the information age, so as to get a more true understanding of contemporary college students’ Views on the teaching mode of the ideological and political course. After that, I will use the one-month ideological and political teaching of PB for the students of group A in the information age of the role of computer technology ITW college party branches, and under the same conditions, use the traditional college party branch work for group B college students. Conduct one month of PB ideological and political teaching. Finally, conduct a questionnaire survey and compare experimental data.

3.3. Questionnaire Questions
Q1: Please fill in your personal information

| Name       |
|------------|
| gender     |

Q2: Your overall satisfaction with the role of computer technology in the work of college party branches (single choice per line)
Q3 Satisfaction after a one-month ideological education on party building in colleges and universities under the application of computer technology

|                        | satisfaction | Not satisfied |
|------------------------|--------------|---------------|
| Learn degree           |              |               |
| Like degree            |              |               |
| Awareness              |              |               |

4. Experimental Analysis of Computer Technology in the Work of College Party Branches in the Information Age

4.1. Views on the PB Work of Party Branches in Traditional Colleges and Universities and the PB Work in Colleges and Universities under the Application of Computer Technology

This article uses the questionnaire method to conduct a questionnaire survey on 400 randomly selected college students. In this way, we can obtain the understanding, liking and cognition level of contemporary college students on the research of computer technology in the party branch of colleges and universities in the information age, so as to more truly understand contemporary college students' views on participating in teaching under the use of new era technology. First questionnaire survey is to understand students' interests and hobbies in learning ideology and politics, and the second questionnaire survey is to understand college students' views on the traditional college party branch PB work proposed in this article and the college party branch PB work under the application of computer technology. The survey results are shown in Table 1 and Figure 1.

Table 1. Students' hobbies in Ideological and Political Learning

|                        | Understand resource pool | Used resource library | Like resource pool | Think resource pool is very important |
|------------------------|--------------------------|-----------------------|--------------------|---------------------------------------|
| Man                    | 78                       | 53                    | 21                 | 74                                    |
| Woman                  | 54                       | 45                    | 18                 | 39                                    |

Figure 1. Undergraduates views on the traditional ideological and political teaching model proposed in this Article and the Application of the Teaching Reform Based on Big Data
From the survey data, it can be seen that most of the party branch PB work in traditional colleges and universities and the PB work in colleges and universities under the use of computer technology have little knowledge, little understanding, and seldom contact, so only a few students express Optimistic about it. Therefore, everyone does not like traditional PB very much, saying that it is very boring, and they have not realized the importance of innovative ideological and political teaching combined with digital technology under the new model.

4.2. Views on the Completion of PB Work by PB Workers under Different Methods
This article asks the A group of college students to use the traditional college party branch PB work and the college party branch PB work under the application of computer technology to conduct a one-month PB ideological education and study. Under the same conditions, let the B group college students use traditional teaching methods for one month. PB ideological and political teaching. During the experiment, college students were surveyed every 5 days, and the changes in their love for PB ideological and political studies were counted. This article visualizes the changes in the degree of affection of the two groups of college students in A and B, and performs curve fitting according to the mean respectively. As shown in Table 2, Figure 2.

| Time         | After 5 Days | After 10 Days | After 15 Days | After 20 Days | After 25 Days | After 30 Days |
|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Group A      | 50%          | 55%           | 63%           | 75%           | 81%           | 86%           |
| Group B      | 50%          | 51%           | 54%           | 60%           | 63%           | 69%           |

Figure 2. Changes of College Students' Liking for Political

5. Conclusions
Based on computer technology in the information age, this article aims at the ideological and political reform of PB in colleges and universities. The PB of college students is an important part of our PB and an important link in building a harmonious campus. With the continuous development of higher education, the traditional student PB system has begun to show some drawbacks. Use performance evaluation as the means and basis of performance management, and based on computer technology in the information age, try to build a performance evaluation index system for college students’ PB work, and provide basic engineering construction for the implementation of college student PB work performance management.

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