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Construction of Network Ideological and Political Course Management Platform Model in Colleges and Universities under the Intelligent Digital Education Environment

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Abstract: The development of intelligent digital education poses new challenge to the ideological and political (abbreviated as IAP for short in the paper) work of college students. And it has brought fundamental changes to college students' learning and lifestyle. Under such circumstances, colleges and universities began to establish network platforms for IAP education. At present, the platform not only needs to meet the needs of ideology, modernization of education, personal and other aspects, but also has problems such as insufficient content and insufficient business personnel. It is necessary to adhere to the new development concept as the guide, strengthen the construction of online and offline platforms, explore the depth of platform contents, and continuously perfect the development of IAP education platform in colleges and universities under the new media environment. Under intelligent digital education, IAP work in colleges and universities must be guided by the new development concept, actively expand the connotation of online and offline platforms, continuously improve the construction of IAP positions in colleges and universities and promote the innovative development of IAP work. The college IAP education platform has strong communication power, considerable practical effects and a wide range of student groups, and can produce multi-dimensional educational effects such as network, practice, culture, management, service, and organization. The article analyzed the current network environment of college students' IAP education, and conducted an in-depth analysis of the main platform, internal auxiliary platform, off-campus auxiliary platform and its own problems of the current IAP education network platform in colleges and universities. This paper conducted a questionnaire survey and finds that more than 80% of the students are in favor of network optimization on the IAP education network platform.

1. Introduction

The 21st century is the era of information explosion. With the help of computer network technology, the dissemination of information, the processing of information, and the use of

information are all increasing exponentially. With the increasing frequency of international exchanges, the differences in social ideology and values have become increasingly prominent. This not only enriches the campus culture of the university, but also poses new challenges to the IAP education platform of college students. With the continuous progress of research on the theoretical system of IAP education, as well as the rise of new educational methods and educational platforms, how to fully innovate and use effective methods to "seek advantages and avoid disadvantages" and "remove falsehoods and retain truths" to serve IAP education has become a new topic for IAP education. With the rapid development of global information technology, intelligent digital education has become the main education mode, which has a great impact on the ideological and political education in colleges and universities.

Student dormitory is an important position for IAP education, an important place for college students' daily life and study, and it has an immeasurable role in their positive thoughts and behaviors. Yuan Y mainly discussed the status quo from the following aspects: infrastructure and interior construction of student apartments, management mechanisms and systems, management team building, and party building in student apartments [1]. In the execution of the double reduction work, Dai Y has made outstanding achievements and formed a classic case for reference of similar schools only [2]. Using the technology adoption model as a theoretical framework, Zhou L augmented the model by adding additional external and perceptual variables to investigate the influences on learners' intention to use an online education platform. The results showed that extraneous covariates such as online program design, perceived system quality, and perceived enjoyment, as well as an additional perception variable (perceived interaction) were identified as valid predictors of learners' intention to use the educational platform [3]. The purpose of the Hussein R study was to appraise the viability and acceptability of social rewards and the accompanying research design, and to provide initial data on the effect of social rewards on user engagement. It also showed that social awards can increase user participation [4].

With the modern information technology's rapid development and the continuous development in the field of education and teaching, its effects on the life, study and thoughts of college students have become more and more extensive and deep. Based on the empirical survey, Chen Z analyzed the growth of college students' ideology and morality in the Internet era. Using modern new media to educate college students on ideals and beliefs is important to strengthen IAP education [5]. Krylova N P clarified the concepts of digital urban environment, digital society and information on the basis of Russian and other research. The historical aspects of the emergence of digital city projects were described [6]. Tomczyk L presented the complexities of preparing pedagogical students to become teachers in preparing to use ICT in the teaching process. The discussions on the expected directions of transformation of current schools and future teacher education systems in the general digital era testified to the complexity of this topic [7]. These methods provided some reference for this study, but the study did not receive considerable publicity due to the short period of time and its small scale sample size.

When investigating the Internet usage of college students for IAP education, it was found that 59.5% of college students spend more than 9 hours on the Internet. In the survey of the purpose and content of the Internet, more than 80% of the students log on to the life and entertainment website, and only about 10% log on the red website of the party group. About 70% of college students choose to make friends and chat. More than 75% of the students chose online channels to learn about social hotspots, and more than 80% of the students supported the optimization of online information monitoring on the IAP education online platform.

2. Network IAP Education Management in Colleges under New Media Information Environment

IAP education is a kind of moral and ideological quality that takes people as the main body to meet the needs of society. From a functional point of view, it has both an individual role and a social role [8]. The manifestations of personality function are the survival function, the development function and the enjoyment function of the individual. Its social functions are political, economic and cultural functions [9].

At present, new media platforms such as online social networking, online shopping, and online news have been widely used [10]. With the increasingly important status of new media among college students, colleges and universities have also begun to pay attention to how to use new media for IAP education, and it is particularly important and necessary to build a new media platform [11].

First of all, the construction of the online IAP education platform is a significant part of the IAP education work. The emergence of new media has greatly improved the way and ability of college students to obtain information, and also brought a variety of information and ideas [12].

Therefore, it is of great significance to build a university campus network IAP education platform for strengthening the values and ideological and moral education of college students. On the one hand, use various forms of new media to strengthen the study and implementation of IAP theories. On the other hand, using this platform can effectively combat online rumors and resist the negative impact of bad values on college students [13].

Second, the construction of an online IAP teaching platform is a necessary step in the modernization of Chinese education. In the past, IAP theory courses were the main positions of IAP work. However, due to the large scale of classroom teaching, limited class hours, and lack of practice, students' personalized teaching was affected [14]. Virtual reality technology and modern technology can be used to educate college students on patriotism and "online school history" to strengthen their understanding and understanding of school history, and to improve the sense of national honor and belonging [15].

The last part is the research on online IAP education for college students. College students in the new era have active thinking, strong innovation ability, and strong subjectivity. They are more inclined to interactive teaching and dislike one-way indoctrination [16]. Meanwhile, through students' needs, the platform is further strengthened in terms of content and layout, so that the platform can satisfy students' demands and fit their characteristics to achieve all-round education for college students [17].

In the background of media fusion, the speed, breadth, and depth of communication have undergone significant changes. Media fusion brings us opportunities, but at the same time, it also brings a crisis. In the era of new media, IAP teaching should apply digital technology to IAP teaching. The integration of digital, image, sound, code, color, action and other symbols raises the level of teaching content and makes the web design and visual effect more in line with the demand of college students. In the meantime, the combination of digital technology and media are used to automatically screen IAP education information and put it at the top to avoid the proliferation of bad information and screen brushing.

At present, the models used to study information dissemination include infectious disease model, continuous viewpoint model, discrete viewpoint model, etc.

The Deffuant model is a continuous viewpoint model. It is assumed that the viewpoints of individual i and individual j at time t are $x_i(t)$ and $x_j(t)$ respectively. If the handicap difference is less than a certain threshold a, then individual i and j would interact to update their viewpoints:

If

$$\left|x_i(t) - x_j(t)\right| < a \tag{1}$$

$$x_i(t+1) = x_i(t) + \mu(x_j(t) - x_i(t)) \tag{2}$$

Otherwise

$$x_i(t+1) = x_i(t) \tag{3}$$

The assumption is that an individual's views depend on the views of the surrounding group, which can be understood as a herd behavior. $X_i(t)$ is used to denote the set of neighbor nodes that meet the opinion threshold with individual i, the average opinion of the group is adopted in the proportion of b, and the influence of other factors in the proportion of (1-b).

$$x_i(t+1) = b\frac{\sum_{j\in X_i(t)} x_j(t)}{|X_i(t)|} + (1-b)\tau \tag{4}$$

$$X_i(t) = \{j: |x_j(t) - x_i(t)| \le a\} \tag{5}$$

Infectious disease models are widely used in the process of information dissemination. From the SIR model with only three states to the SICR model with four states, the research focuses on the probability transfer between various states.

The degree feature of a node characterizes the most basic connection characteristics of a node in a social network. The degree parameter of any node in a social network represents the number of neighbor nodes directly connected to the node. In social networks such as Weibo and Renren, each node represents any user in the interpersonal network. The degree of a node is proportional to social relations, that is, the greater the degree of this node, the more social relations of people represented by this point.

The degree parameter and degree distribution of nodes in the network respectively reflect the characteristics of independent nodes and the overall compliance distribution of the degree distribution in the global network. In complex networks, the degree distribution can be mathematically described by computing the average degree parameter of the global network, assuming that the average degree is set to <d>. <d> represents the global network characteristic - average degree, that is, the sum of all node degrees to the total number of nodes. d_p represents the degree of node p. Using the mathematical representation as shown in Formula (6):

$$< \mathrm{d} >= \frac{1}{\mathrm{N}}\sum_{\mathrm{p}=1}^{\mathrm{N}} d_p \tag{6}$$

The average path length is calculated by averaging the path lengths between all nodes in the global network. The mathematical expression Formula is described as Formula (7). d_{ij} represents the total number of hops between nodes i to j.

$$\mathrm{L} = \frac{1}{\mathrm{N}(\mathrm{N}-1)/2}\sum_{\mathrm{i}>\mathrm{j}} d_{ij} \tag{7}$$

According to the calculation Formula (7), when the two nodes cannot be connected, the distance between the two nodes is infinite, and this result would lead to infinite d_{ij}. To solve this problem, so

$$\mathrm{L} = \left(\frac{1}{\mathrm{N}(\mathrm{N}-1)/2}\sum_{\mathrm{i}>\mathrm{j}} {d_{ij}}^{-1}\right)^{-1} \tag{8}$$

The clustering coefficient is an important evaluation parameter to describe the clustering of a node, and to a certain extent, this parameter describes the degree of community of the node's neighbor nodes. In simple terms, the clustering coefficient can show the degree to which a node's neighbor nodes are also connected to each other. The Formula of the local aggregation coefficient in the network is shown in Formula (9):

$$S(i) = \frac{2|\{e_{jk} \cdot v_j, v_k \in \Gamma(i)\}|}{k_i(k_i - 1)} \quad (9)$$

In Formula (9), both node j and node k are neighbors of node i, and e_{jk} represents the edge of node j and k. The number of these edges is divided by the maximum number of edges of node i to get S(i). In short, it calculates the ratio of the number of triangles around node i to the number of edges connected to node i. Therefore, the global aggregation coefficient in the unweighted network can be mathematically described as Formula (10):

$$C^{(2)} = \frac{1}{N} \sum_i S_i \quad (10)$$

3. Construction of Network IAP Education Management Platform in Colleges

The audience of IAP education in colleges and universities is a huge group, which requires a large amount of comprehensive and accurate data to be collected, stored and processed. This requires people to have data awareness in IAP education. At the same time, workers must have a strong ability to respond. In case of unexpected situations, people should be prepared for emergencies and sum up experience. This is the first priority.

The IAP research is based on IAP theory, while the IAP research in colleges and universities is based on the release of hot news and the establishment of databases. Professional teachers and staff in colleges and universities investigate, collect and upload information. As an important part of the IAP theory system, the information disclosure system is composed of multiple modules. The functions and work responsibilities of each module are coordinated with each other, forming a complete and strict network system.

To further understand the current situation and effect of the application of IAP education network platform in colleges and universities, a questionnaire was designed in this paper in terms of the teaching situation of IAP education, the basic situation and content requirements of online IAP education methods for college students. A survey was done on college students in University A. 205 pieces of questionnaires were distributed and 200 pieces of questionnaires were collected, of which 200 were valid. The effective questionnaire recovery rate was 97.6%. The basic situation of the respondents is shown in Table 1. It is hoped that through this survey, we can understand the new problems faced by the IAP education in universities under the impact of Internet and the influence of environment in the world, and then the paper put forward corresponding optimized countermeasures.

Table 1: Survey respondents' basic information

Parameters		Number of people	Proportion
Gender	Boys	98	49.5%
	Girls	102	50.5%
Age	Freshman	52	26%
	Sophomore	76	38%
	Junior	72	36%

According to the survey data and the characteristics of modern college students, it is very significant to strengthen the psychological quality education of college students, cultivate the ability of independent study, life and work. Besides, it is also important to cultivate excellent ideological, moral and political quality and sense of unity and cooperation, and strengthen family education.

4. Current Situation of Network IAP Education Management Platform in Colleges

The classroom teaching situation of IAP education is one of the important manifestations of grasping the classroom effect and the ideological state of college students. The overall evaluation statistics for the current IAP education classroom teaching effect are shown in Table 2.

Table 2: Overall evaluation of classroom teaching effect

	Number of people	Proportion
Very satisfied	12	6%
Satisfied	54	27%
Basically satisfied	111	55.5%
Unsatisfied	23	11.5%

It can be seen from the table that only 6% of the students are very satisfied with the classroom teaching of IAP education, and 11.5% of the students are dissatisfied. Based on this, statistics on the improvement of IAP education classroom education and teaching methods are carried out, as shown in Table 3.

Table 3: Statistics on improving the teaching methods of IAP education in classrooms

	Number of people	Proportion
Enrich the teaching content of Civics classroom	46	23%
Adding practical links	121	60.5%
Introduce online teaching mode	19	9.5%
Increase extra-curricular knowledge	67	33.5%

In order to grasp the details of college students, we also investigated the use of the Internet by college students, as shown in Figure 1. Figure 1(a) shows the statistics of college students' online time, and Figure 1(b) shows several problems that college students have during the process of surfing the Internet.

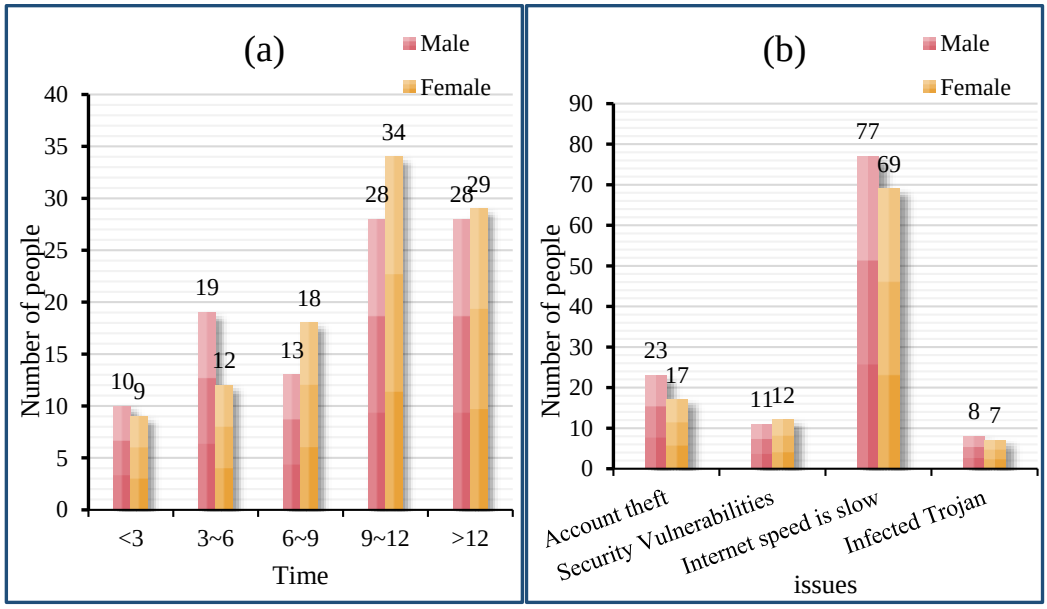

Figure 1: Internet access of college students

It can be seen from Figure 1 that college students generally spend a long time online, 31% of college students spend between 9 and 12 hours online, and 28.5% of college students spend more

than 12 hours online. Among them, 73% of the students believe that the Internet access speed is slow, and some students have also experienced problems such as account theft, security breaches, and computer infection with Trojan horses. Therefore, strengthening the IAP education on campus, optimizing the network structure, improving the network speed, equipping the network firewall, and establishing a safe network environment are of great significance to promoting the IAP education.

Figure 2 shows the results of a survey on the purpose and content of the Internet for college students. Figure 2(a) is the statistics of the college students' surfing purpose, and Figure 2(b) is the statistics of the types of websites that college students browse online.

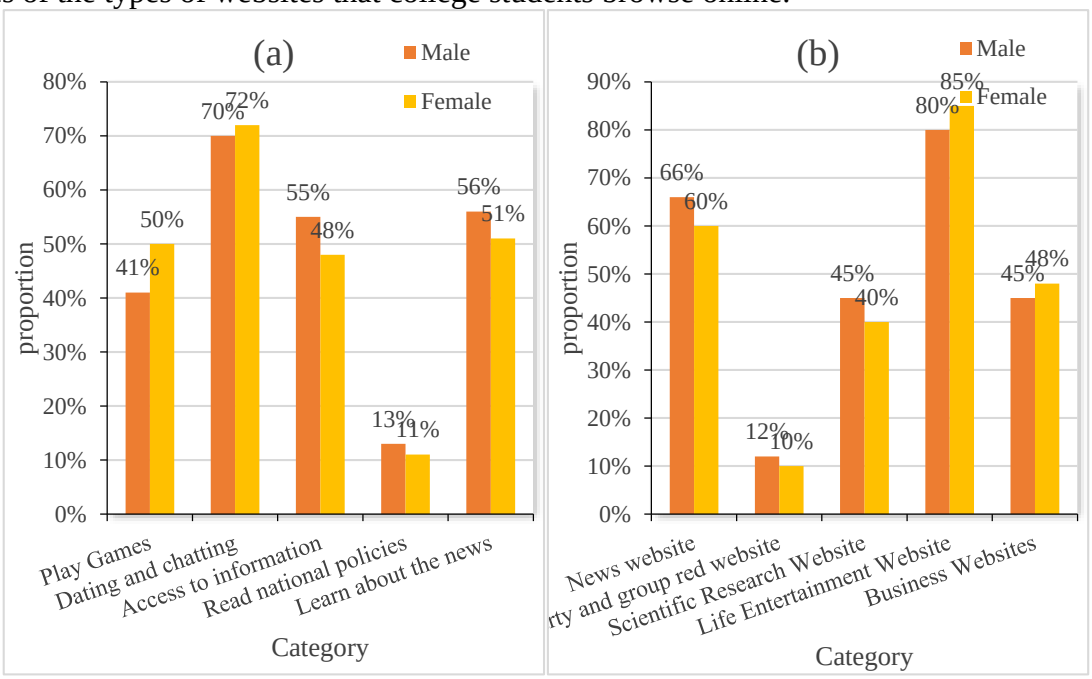

Figure 2: Statistics of college students' online website types and content results

As can be seen from Figure 2, in the survey on the purpose and content of the Internet, the largest number of people logging on to the website is the life and entertainment website, accounting for more than 80%, followed by the news and current affairs website, accounting for about 60%. Only about 10 percent of people log on to the caucus red website. About 70% of college students choose to make friends and chat, and about 50% and 11% of students choose to learn about current affairs and national policies, respectively. This reflects that excessive entertainment has become one of the development trends of social cultural entertainment. Therefore, strengthening the guidance of cultural development is also very important to improve the effect of IAP education.

When college students want to keep abreast of social hot issues and express their opinions, they have different approaches. The result statistics are shown in Figure 3. Figure 3(a) is the statistics of the channels for college students to understand social hot issues, and Figure 3(b) is the statistics of the types of platforms used by college students to express their opinions and views on ideology and politics online.

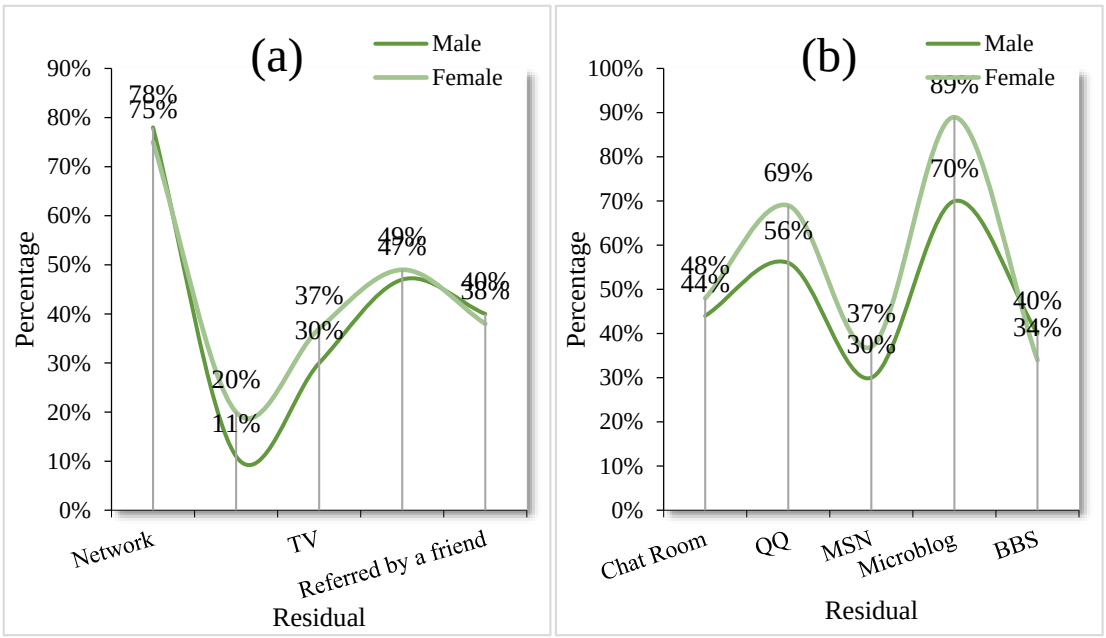

Figure 3: The tools selected by college students to understand hot issues

As can be seen from Figure 3, more than 75% of the students chose online channels to learn about social hotspots, and the platform with the largest number of people expressing their opinions was Weibo, accounting for more than 70%.

Figure 4 shows the statistics on improving the way of IAP education. Figure 4(a) is the statistics of boys' improvement of IAP education, and Figure 4(b) is the statistics of girls' improvement of IAP education.

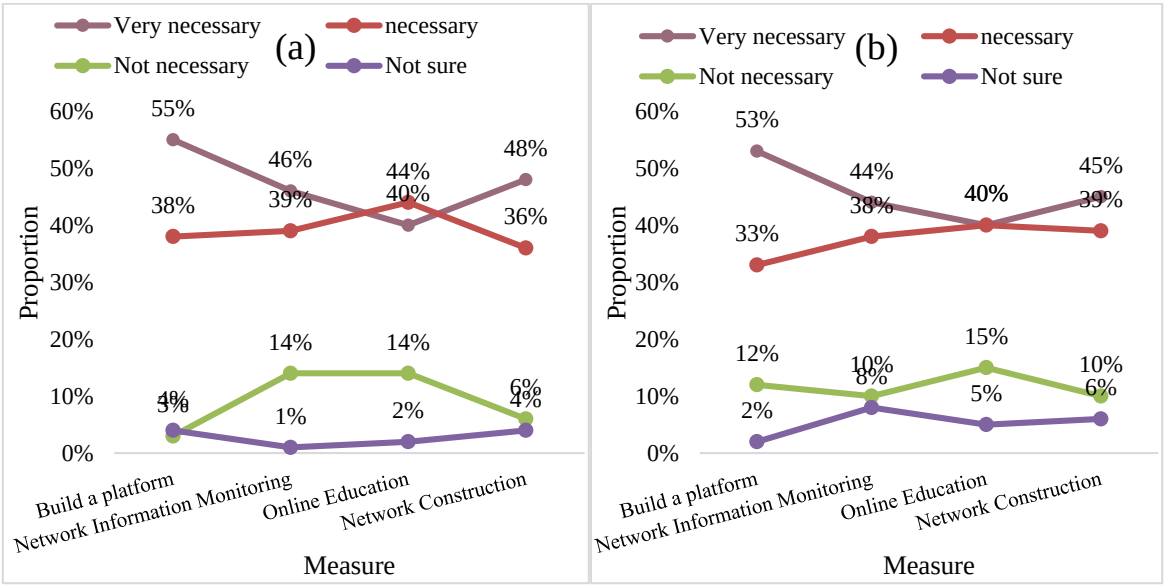

Figure 4: Statistics on improving the way of IAP education

It can be seen from Figure 4 that 85% of boys think it is necessary and very necessary to monitor network information, and 82% of girls.

It is necessary to innovate IAP education, establish a sound public opinion evaluation system, and establish a sound public opinion supervision mechanism and working mechanism. First of all, it is essential to analyze the content of new media IAP big data. It mainly includes: the number of

visits, reprint rate, and network influence of popular news. The second is to improve the quality and efficiency of supervision, especially to make the management system more flexible and effective, such as adapting to the needs of college students in multiple directions, enriching the resources of new media, and breaking through the time and space of IAP education limitations.

5. Conclusion

Under the environment of intelligent digital education, the IAP work of college students has received more and more attention. As "gatekeepers", educators must do a good job in IAP work. Facing huge risks and opportunities, we must continue to guide college students and cultivate correct news and public opinion concepts. It is essential to make full use of the role of IAP educators, and strive to make IAP teaching interesting, so that students have a sense of achievement, gain and satisfaction. It is necessary to insist on building morality and cultivating people, and build the online IAP education platform for college students into a product trusted and loved by teachers and students, so as to further improve the level of IAP work in schools.

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