

## Retraction

# Retracted: Exploration and Application of College Students' Management Model during the Epidemic Based on Big Data Technology

### Mathematical Problems in Engineering

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their

agreement or disagreement to this retraction. We have kept a record of any response received.

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- [1] B. Liang, "Exploration and Application of College Students' Management Model during the Epidemic Based on Big Data Technology," *Mathematical Problems in Engineering*, vol. 2022, Article ID 4158977, 9 pages, 2022.

## Research Article

# Exploration and Application of College Students' Management Model during the Epidemic Based on Big Data Technology

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In the face of the sudden new crown pneumonia epidemic, “retroversions” across the country are facing difficulties, fighting with their lives on the front line of the fight against the epidemic, and protecting the lives and health of the people across the country with love. As an important position for epidemic prevention work, colleges and universities, in order to maintain the physical and mental health of students, use the grid management model to closely organize the student management work network, and extend the epidemic prevention and control work to the “end” of student management, so as to effectively strengthen the epidemic prevention work position in colleges and universities. In today’s era of big data, internet technology has brought great convenience to people, and people are also subtly enjoying the benefits of the era of big data in production and life. This study mainly discusses the combination of big data technology and efficient managers to deal with the management of students in the era of big data more scientifically and reasonably, and at the same time, colleges and universities do a good job in the practical significance and role of grid work mode for students under the normalization of the antiepidemic situation mode, to drive the overall development of colleges and universities and promote the improvement of college management level.

## 1. Introduction

At the beginning of 2020, the sudden epidemic impacted the normal economic, social, and life order [1]. There is a huge base of education groups in our country, and the prevention and control of the new coronavirus pneumonia epidemic are a matter of concern to all sectors of society. Kindergartens, primary and secondary schools, and institutions of higher learning are places where students collectively live. The susceptible populations are concentrated, which can easily lead to cross-infection and a high degree of social concern. In particular, colleges and universities (referred to as colleges and universities) have a wide range of students from a wide area and a high density of crowds [2, 3]. Scientifically and accurately guiding colleges and universities to do a good job in epidemic prevention and control, maintain the health and safety of teachers and students, and resume work in colleges and universities is of great significance for maintaining social order. Therefore, students must meet three conditions to consider starting school: first, the epidemic situation is

basically under control. The so-called basic control is determined by the state, and the specific situation may be accurate to the county-level epidemic prevention and control situation. Second, social parents all think, or the vast majority agree, that it is safe to start school now. The third is that the necessary prevention and control materials and conditions are in place after the school starts [4].

In recent years, many domestic experts, scholars, and frontline education management workers have carried out a series of explorations and practices on the mode, mechanism, and rules of college student management in view of the current situation of college student management our my country, and achieved many effective results. However, due to the lag of higher education reform, the hardships of cultural changes, the difference between the consciousness of higher education workers and the requirements of the times and other factors, the management model of college students, and the spirit of the rule of law in running schools according to law, student-oriented humanistic feelings, information technology. There is still a big gap and many

deficiencies in the objective requirements of scientific thinking, and these deficiencies and deficiencies are particularly prominent in response to the epidemic [5, 6]. Therefore, it is necessary to objectively analyze and sort out the defects of the current college student management model through epidemic prevention and control [7].

Defects in the information communication mechanism in student management work are as follows: first, the transparency of information is not high, and the information held by the school and student management workers and students is asymmetric. The second is to ignore the students' right to know and not to treat the students as the main body of the school. The lack of humanistic care and the manifestation of authoritarianism in the current information communication process have greatly affected the credibility and effectiveness of management work in colleges and universities and affected the psychological expectations and psychological stability of the student group. The practice of epidemic prevention and control shows [8, 9] that the more open and transparent the information, the more stable the students' emotions. Conversely, if one thinks that prevention and control information needs to be kept secret, is unwilling to disclose real information, and ignores the basic right of students to know, it will cause panic and mood swings among students, which in turn will cause group anxiety. Therefore, it is very necessary to improve the timeliness, standardization, and openness of information disclosure [10].

Defects in the psychological intervention model in the student management work model are as follows: in the process of the prevention and control of the new crown epidemic, we deeply realized that [11] the psychological intervention of students is a very technically difficult task, especially in the diversification of information channels and dissemination methods. At present, college students have a strong sense of subjectivity and have a high degree of psychological sensitivity to the sudden new crown epidemic. They will accept true and false information from all aspects, resulting in excess information. The practice of epidemic prevention and control shows that eliminating panic and anxiety by blocking news will not only fail to act as a psychological intervention but will produce results that run counter to our original intentions. From another point of view, the psychological intervention mode of closed information of college student management workers not only ignores college students but also seriously interferes with college students' psychological expectations and rational behavior.

Defects of student management work on college students' behavioral guidance model are as follows: behavioral guidance is an important work method and work art to maintain team spirit and combat effectiveness. However, in the traditional management model, more emphasis is placed on one-way leadership, ignoring interaction. In particular, most of the counselors in the management team are relatively young and relatively inexperienced. In guiding students' behavior, they tend to respond passively, in a single way, and sometimes extreme. In the early stage of epidemic prevention and control, the university management team

was at a loss and blindly dealt with it, which would cause local behavioral disorder in some groups of college students to varying degrees. Growth makes the psychological intervention of college students after returning to school more difficult and complicated. The practice has shown that traditional student management work methods often ignore the psychological expectations and real feelings of college students in the new crown epidemic environment, mandatory intervention methods, and simple and rude work methods when dealing with the epidemic and leading the healthy behavior of college students [12, 13], and not only failed to carry out successful psychological intervention for students, but also hindered the positive and effective emotional communication between the school and students, and to some extent caused the spread of students' panic and anxiety behaviors.

The normalization of epidemic prevention and control requires colleges and universities to adhere to proactive, efficient, and systematic management concepts, and to build a set of management frameworks for college students with clear main lines, comprehensive planning, and strong guarantees (see Figure 1).

- (1) One main line: Unswervingly revolving around the main line of "three comprehensive educating people," the "three comprehensive educating people" thought proposed by General Secretary Xi Jinping is the fundamental adherence to all work in colleges and universities. Under the normalization of epidemic prevention and control, it is necessary to adhere to the education of all staff, the whole process, and all-round education; strengthen the ideological and political education of epidemic prevention and control; pay close attention to the learning of epidemic prevention and control knowledge; and standardize the epidemic prevention and control behavior of college students [14]. It is necessary to remain unswerving around the main line of "three comprehensive education," not only to incorporate the epidemic prevention and control work into the "three comprehensive education" general system but also to run the "three comprehensive education" spirit into the entire chain of epidemic prevention and control.
- (2) Double overall planning: the national level emphasizes the need to "coordinate the prevention and control of the new crown epidemic and economic and social development, and win the double victory of epidemic prevention and control and the realization of economic and social development goals," and the management of college students also needs to be coordinated to do a good job in the prevention and control of the new crown epidemic and the daily management of students [15]. Neither can we go to the extreme at all costs for epidemic prevention and control, nor can we neglect epidemic prevention and control, causing epidemic outbreaks to fall into a passive state. At the same time, the prevention and control of the new crown epidemic and the daily

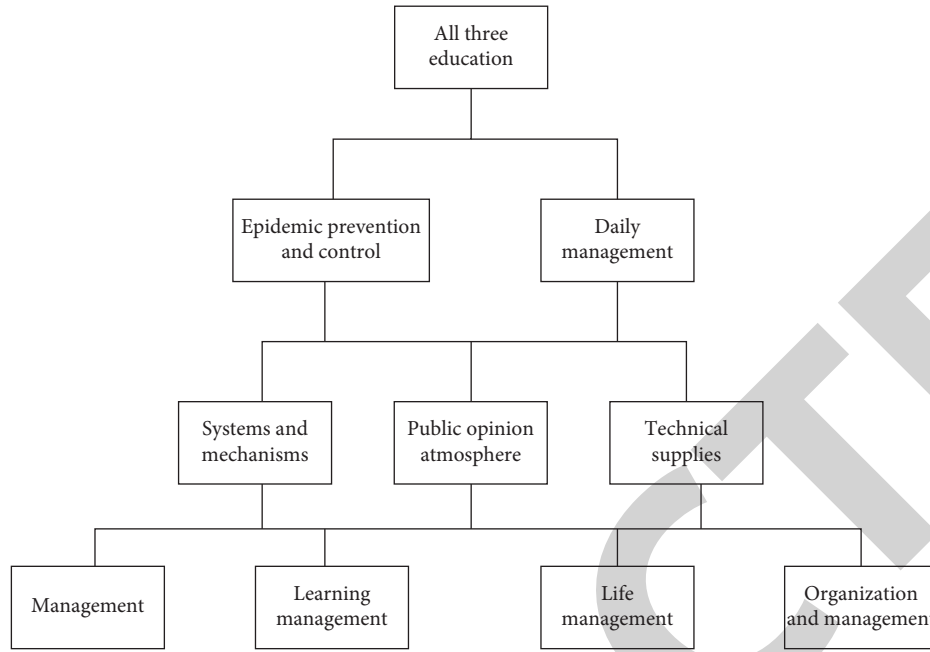


FIGURE 1: The management analysis model of college students under the normalized form of epidemic prevention and control.

management of students should be integrated and harmonious, and the content of epidemic prevention and control should be embedded in the daily management so that the two are organically unified.

- (3) Three guarantees: to strengthen institutional mechanisms, public opinion atmosphere, and technical material support, a reasonable management framework must have strong institutional mechanism guarantees, public opinion atmosphere creation, and technical material support. The same is true for college student management. The first is to strengthen institutional guarantees, establish a three-level prevention and control system at the school level, departments, and teachers, clarify responsibilities, and strengthen supervision. Under this system, on the one hand, a normalized daily student management committee or leading group for epidemic prevention and control is established to strengthen epidemic prevention and control and daily management; on the other hand, an emergency response headquarters and emergency response mechanism are established. The emergency plan shall be dealt with in a timely manner by the emergency response headquarters in accordance with the specifications. The second is to strengthen the guarantee of a public opinion atmosphere. It is necessary to make full use of the tools of publicity and public opinion, to strengthen the normalization of epidemic prevention and control work, and to strengthen the guarantee of technical materials. Scientific epidemic prevention is inseparable from the study of prevention and control knowledge and the support of epidemic prevention technology, and the guarantee of epidemic prevention funds and

epidemic prevention materials. Colleges and universities should provide teachers and students with the necessary technical support and material supply in a timely manner to ensure that the epidemic prevention war is won [16, 17].

## 2. Management Characteristics of College Students during the Epidemic

Since the outbreak of the new coronavirus pneumonia, colleges and universities have firmly implemented the important instructions of General Secretary Xi Jinping that “the epidemic is an order, and prevention and control are a responsibility,” and have taken strict measures to actively prevent and control major epidemics, and strive to be responsible, responsible, and responsible for the soil. [18, 19]. In the face of major epidemics, colleges and universities, as crowded places, have a huge risk of prevention and control. In the front line of colleges and universities to strictly prevent and control major epidemics, the college student management team (hereinafter referred to as the “student team”) plays a vital role.

*2.1. The Fullness of the Management Subject Caused by the Emergency.* From the discovery of the new crown pneumonia epidemic to the full outbreak, it took less than two weeks. During the winter vacation, students were leaving school, and in time for the upcoming Spring Festival, the large-scale population migration seemed unstoppable. Although the students have left the school, the management of students during this period is not the school’s responsibility, but the colleges and universities that cultivate morality should be concerned about the safety of the students while

off-campus. After the online school starts, the management work of students during the period of leaving school should not only fall on the academic team but also on full participation, through the main position of the online classroom, to do a good job in student management.

*2.2. The Complexity of Management Objects Caused by Discreteness.* The biggest feature of student management while away from school is complexity. This characteristic is caused by discreteness. Structurally, students have changed from a whole to discrete individuals; in space, students and staff have changed from face-to-face to remote noncontact; in time, students who have changed from the original centralized (such as recess, noon, self-study, etc.) management have become random management, and students have become online “customer service” at any time; psychologically, students’ psychology presents characteristics such as disorder, sway, fear, and anxiety. Communication costs for personnel have dramatically increased. In addition, due to remote discrete management, management paths and methods are relatively simple. At present, we can only rely on internet means, and some areas in our country have not fully popularized the internet, which undoubtedly increases the difficulty of management [20].

*2.3. Defensiveness of Management Objectives Caused by Emergencies.* The outbreak of the epidemic has forced regular management goals to be adjusted. In particular, active offensive goals are generally adjusted to passive defensive goals. For example, under normal circumstances, the goal of student management may be to cultivate students’ all-round development in moral, intellectual, physical, esthetic, labor, and other aspects, but during a major epidemic, the goal of student management may be reduced to ensure the physical and mental health of students and the safety of the school to stabilize. This greatly reduces the management enthusiasm and management efficiency of the academic team.

*2.4. The Lack of Management Theory Caused by Low Frequency.* Due to the low frequency of epidemics, the country’s politics, economy, culture, education, science, and technology are undergoing rapid changes [21]. For example, the current COVID-19 epidemic, whether it is management, medical care, technology (such as big data, 5G, and robots), or people’s consciousness, has undergone earth-shaking changes compared with previous years. However, there is no mature theory for epidemic management at the school level. This also makes it more difficult to unify thinking during the epidemic.

The task of safety prevention and control for college students is arduous, and the pressure is huge. After the outbreak of the new crown epidemic in 2020, due to the large overall number of college students in various colleges and universities, each college has a large number of about 20,000, which are widely distributed and spread all over the country, posing huge challenges to the safety prevention and control

of college students. In the initial stage of the delayed start of school and the later stage of resumption of school, epidemic prevention and control have become the primary political task of colleges and universities. Due to the uninterrupted emergence of the epidemic, the daily data reporting and various investigations of the epidemic prevention and control platform are overwhelmed, and the time is tight, the number of people is large, and the tasks are heavy; colleges and universities are also faced with 2 long vacations and 2 school openings every year, nearly 10 million. The number of college students has to go back and forth, which brings enormous pressure to the management of students in colleges and universities. The indoor activities of college students are limited by space, and going out to participate in competitive activities is reduced. After the outbreak of the new crown epidemic, in the early stage, the normal teaching of college students turned online. After the students returned to school in the later stage, due to the requirements of epidemic prevention and control, indoor gathering activities were still limited by a certain scale and the number of people, which affected the development of indoor activities. Many lectures need to control the number of students participating, or change to online, and students who go out to participate in various competitions are strictly controlled. Most of the live competitions are changed to online competitions or directly canceled, which affects the students’ ability to compete on-site. Due to the lack of normal face-to-face social interaction, the needs of college students cannot be met, and mental health problems are easy to appear. The original winter and summer visits to poor students were affected and could only be conducted online, and face-to-face communication with students’ parents was affected [22].

### **3. Significance of Applying Big Data in University Management**

Big data has been integrated into all aspects of production and life, academic research, work, and study in today’s society, and data play an extremely important role in human society. Colleges and universities undertake the mission of cultivating high-quality talents for our country’s modernization construction, and the management of students has always been one of the priorities of colleges and universities. With the evolution of the background of the era of big data, the paths and ways for people to know the world and understand the world have occurred. With the change, traditional empiricism has been replaced by data fusion [1]. The traditional college student management work experience has been difficult to adapt to the new needs of college student management in today’s era. Under the background of the era of big data, the management of college students should not only be based on traditional empirical theory but also pay more attention to the research and adoption of scientific data analysis, so that more scientific and reasonable decisions can be made in all aspects of student management. Influenced by the background of the era of big data informatization, the popular ideas, life patterns, and learning orientations of college students have undergone tremendous changes, and

the structure of traditional knowledge has been continuously optimized and developed. Using the combination of digitization and empiricism to optimize the scientificity and effectiveness of college student management is a new challenge to the current college student management work in the era of big data.

During the epidemic, the academic achievements and personality development of college students during their studies in school will have an important impact on their subsequent performance in work [23, 24]. Therefore, it is necessary to work hard in student management, actively combine the background of the big data era, and think about problems from the perspective of students, in order to better understand the needs and thinking directions of students. College student administrators should establish innovative student management awareness, learn big data knowledge, rely on big data technology, and use big data to carry out innovative development of student management in the new era. In order to better implement the innovation of student management work, college student administrators can actively explore ways to optimize management work, and continuously optimize the awareness and quality of student management work. On the basis of inheriting the excellent experience of traditional student management work, combined with the concept of big data analysis, considering the students, thinking from the students' standpoint can more accurately understand the changes and dynamics of students' thoughts, so that it is convenient for student managers to design scientific and reasonable management work according to the dynamics of students' thinking changes, and it is necessary to closely integrate the current growth of college students and the points of interest and concern in the learning process, to ensure the advanced nature of student management. The primary premise of these creative contents is to establish an innovative awareness of student management work based on the background of the big data era.

#### 4. Management Mode Exploration and Application

*4.1. Model Innovation.* The people-oriented thought and humanistic cares are the genes and codes of traditional Chinese culture. During the prevention and control of the new crown epidemic, its tenacious vitality and sustainable inheritance have been brought into full play [25]. In the process of global epidemic prevention, this cultural advantage is unparalleled in the world, fully demonstrating the profound heritage of five thousand years of culture, and forming a sharp contrast with the Western epidemic response model that ignores life. Therefore, in the period of normalized epidemic prevention and control, it is necessary to integrate the people-oriented thinking and humanistic care into the management of colleges and universities, and innovate the management work mode of college students, which is mainly reflected in the following aspects:

(1) We establish a communication model based on the people-oriented culture. First of all, college administrators should establish a standardized information disclosure system when facing public emergencies, so as to satisfy the basic right of college students to know and highlight the importance of college students in handling public emergencies and the subject position. Second, public emergency information should be disclosed and released according to the law, in a transparent, timely, and accurate manner. College administrators should have a set of effective work plans in the face of public emergencies, establish scientific and orderly information disclosure channels and strategies, and actively conduct two-way information communication with college students to build a harmonious relationship of trust. At the same time, attention should also be paid to the strategic and artistic nature of revealing the truth about public emergencies. When necessary, authoritative experts can be used to release information to improve the credibility and authority of public information.

(2) We establish a model of students' thinking, psychological intervention, and guidance based on emotional connection. To establish a scientific and reasonable psychological intervention system for college students, it is necessary to truly find out and understand the root causes of college students' psychological problems. We establish an emergency model of college students' behavior in public emergencies from the macro- and microlevels, accurately observe the behavior of college students' ideological and psychological problems, analyze the main and secondary causes of college students' ideological and psychological fluctuations, and scientifically establish college students on this basis, that is, thought and psychological intervention system.

First of all, it is necessary to fully understand the real psychological feelings of college students in public emergencies and the ideological fluctuations caused by them. We correctly distinguish between the psychological state of college students under the normalization of the epidemic and the emergency response in public emergencies.

Second, it is necessary to actively help college students overcome their fear and anxiety. We establish a trusting relationship and communication platform based on emotion, and provide necessary material conditions and spiritual support for college students to overcome psychological barriers.

(3) We establish a dual-subject model of student management, oriented by students' growth and talent. Both university administrators and college students are the main body of the school. In the case of unit-dominated and pluralistic coexistence, the traditional model of one-way instillation should be based on the social psychology of scientific cognition of

college students' behavior, accurately grasp the predictability and timeliness of work, and improve the artistic and strategic nature of work. In the face of public emergencies, university administrators should deeply analyze the psychological basis of college students' behavior, control the internal and external conditions caused by psychological problems such as anxiety and panic, scientifically formulate differentiated leading strategies, and formulate personalized leading measures.

University management workers must be good at grafting various information dissemination platforms, and with the help of big data, the internet, and other means, we establish and improve a multidepartment and multidimensional linkage mechanism, maximize the "cloud" efficiency of the university management team, and plug in the university management work. High-tech wings, with the help of the credibility and authority of authoritative persons and professionals, strengthen the exchange and communication of positive information among college students, and through the release and flow of correct information, guide the correct psychological expectations of college students, and actively resolve irrational emotions and behaviors.

To sum up, during the normalized epidemic prevention and control process and after the epidemic, the talent training mode and training plan of colleges and universities will inevitably change, which will lead to changes in the working methods, and working methods and working modes of college student management. The experience accumulated in dealing with the epidemic disaster shows that the traditional cultural status of the people-oriented thought will be more solid in the ideological and political work of colleges and universities, and the humanistic thought will be implemented in the management of colleges and universities in times of crisis or in daily work, and become a work norm. The working method of the core concept of humanism will definitely become an inevitable choice for the management of colleges and universities. With the help of big data, the internet, and cloud platforms, the in-depth development of behavioral guidance, psychological intervention, and ideological guidance for college students will also become the normal mode and basic means of college student management.

**4.2. Model Construction.** In view of the current epidemic situation, the construction content of this plan starts from the perspective of epidemic prevention and control, relies on the support of big data, and uses real frontline data to control the epidemic prevention and control problems as a whole. The most suitable daily normalized collection method is adopted, which is highly efficient and provides the full-cycle data of the signs of all staff. Relying on the campus data platform, it can conduct real-time analysis, scientific analysis, data traceability, and auxiliary decision-making for the overall epidemic situation and solid backing for epidemic prevention and control. First, we establish a data service platform to capture and manage

existing data in real time, and then analyze it. It is mainly composed of a big data governance platform and a big data exchange and sharing platform. It solves the difficulty in capturing the original multidimensional data and the inconsistent data standards. Data exchange steps are cumbersome, data islands, and other issues. Through data visualization technology, a leadership cockpit can be established, which can intuitively view the current situation of relevant affairs in various regions, so as to achieve overall control. For the terminal, an epidemic prevention and control system is built to support the normalized collection and transaction processing of the mobile terminal, and at the same time, the full cooperation of frontline personnel is also required.

**4.2.1. Building the Leadership Cockpit.** By building a leadership cockpit, promoting the school's management decisions through a big data analysis model, and displaying key indicators in the form of a large visual screen, the school can conduct data analysis for teachers and students, and establish teacher and student management analysis. Epidemic situation analysis and early warning are as follows: by collecting the full amount of personnel trajectory data such as wireless Wi-Fi, all-in-one card, and internet authentication, the supervision analysis of each region is generated, and the changing trend of personnel trajectory is analyzed from a macro-perspective, according to the "University Epidemic Prevention and Control Guidelines" to set the threshold value real-time early warning, and intuitive and effective understanding and control of the prevention and control situation. Figure 2 shows the epidemic big data monitoring platform.

#### 4.2.2. Backtracking of Contact Groups

- (1) Inquiry function of close contacts: using a social discovery algorithm, combined with consumption records of confirmed patients, access control records, attendance records, etc., to achieve accurate positioning of close contacts, you can query the location and name of close contacts within the recorded time period, student numbers, and other data that are displayed.
- (2) Playback of the personal trajectory of the diagnosed person: the administrator can intuitively understand the campus behavior trajectory of the confirmed person during this time period, such as entry time, entry location, and stay time. Figure 3 shows personal trajectory analysis.

#### 4.2.3. Crowd Gathering and Staggered Peak Guidance

- (1) The current number of people in the building: according to the construction of the school, we confirm the capacity of the campus teaching buildings, dormitory buildings, libraries and



FIGURE 2: Epidemic big data monitoring platform.

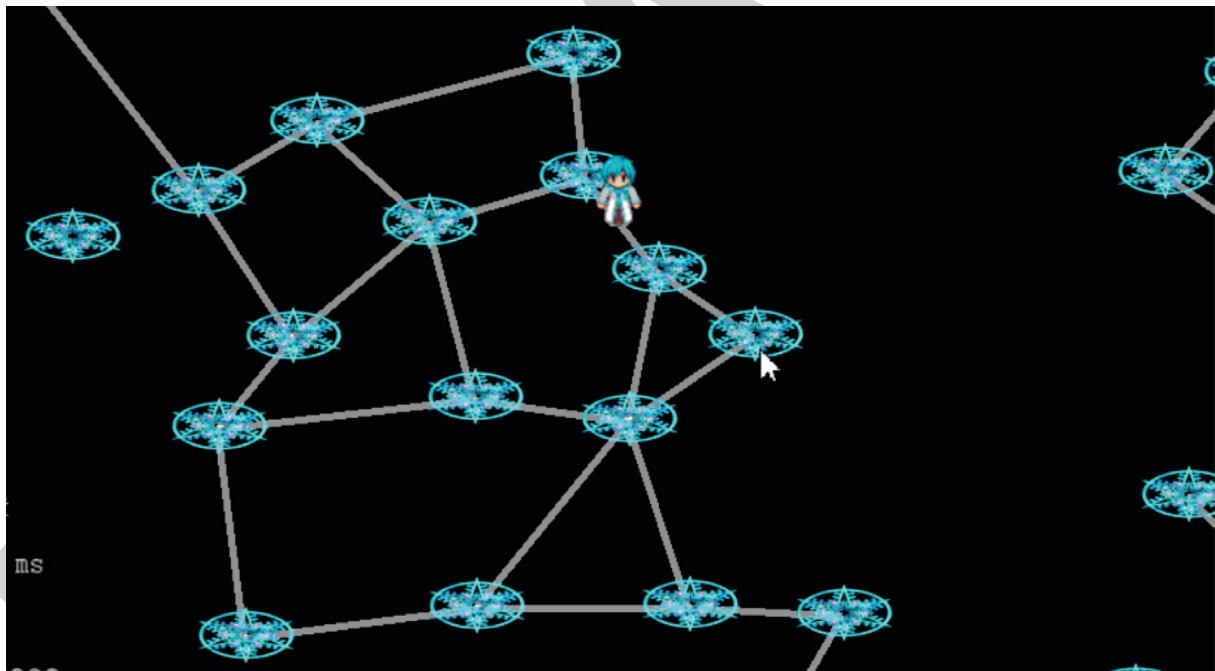


FIGURE 3: Personal trajectory analysis.

- canteens, and other places where people can easily gather. The number of people is limited. If the number of people exceeds the warning, the building will be displayed in red.
- (2) Building entry and exit frequency: the school can query the current building exit frequency (hourly) and the current building entry frequency (hourly) in real time according to the data.
  - (3) Regional flow monitoring: monitoring of crowd gathering places such as school gates, teaching buildings, libraries, gymnasiums, canteens, dormitories, etc., in order to efficiently manage regional personnel, identify risk factors and implement epidemic prevention measures. Figures 4 and 5, respectively, show some prevention and control measures.





FIGURE 4: Monitoring of a university canteen.



FIGURE 5: Checking in and out of people.

#### 4.2.4. Early Warning of Abnormal Behavior

- (1) General overview of early warning: based on the analysis of big data, the types of early warning can be clearly distinguished. We accurately predict the trend of the number of warnings through an anomaly detection algorithm and provide the ranking of the number of warnings.
- (2) Alert type query: we display the list of alerts filtered by conditions such as college, major, class, alert type, alert status, and student ID name.
- (3) Automatic push of early-warning information: administrators can automatically push early-warning messages through e-mail, SMS, WeChat, etc., without leaving home so that abnormal behaviors of students can be discovered and dealt with in time.

## 5. Conclusions

To sum up, in today's era of big data, the management and education of college students are facing greater challenges during the epidemic, and higher requirements are placed on the overall

quality of staff. Data resources improve work efficiency. In particular, it is necessary to increase support from both hardware and software, which is of great significance to the development and innovation of the education management model for college students. With the continuous development of big data technology, the education management of college students must also keep pace with the times, and constantly improve and adjust the management method of big data, so as to promote the education management of college students in our country to a new level.

### Data Availability

The dataset can be obtained from the corresponding author upon request.

### Conflicts of Interest

The author declares that there are no conflicts of interest.

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