

Laboratory equipment management methodology based on information system

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Abstract: With the continuous reform of the education system, and in order to cultivate new talents, schools have gradually established laboratories and constantly updated experimental equipment, which also puts forward new requirements for the overall management of instruments. This paper analyzes the standardized management of the use process of laboratory instruments and equipment in colleges and universities, and puts forward corresponding reform measures to improve the efficiency of the use of instruments and equipment.

1. Problems in the Use of Laboratory Equipment in Colleges and Universities

1.1 The lack of attention to the experimental course has led to the failure to protect the instruments and equipment properly.

At the beginning of the experiment, most teachers are no different from the university experiment teaching class, which is the basis of learning the activity class of the experiment class. The laboratory is one of the three basic constructions of the school. Since it is a basic construction, it needs to be completed as a construction task. The work of the laboratory has been discussed for decades, and it is said to be the most difficult problem. How to do this construction well is always a big problem for the teachers in charge of the experiment. How to do this well is also the most important thing. In the framework of the whole course, the purpose of experimental activities is to integrate classroom experimental teaching with extracurricular activities. The experimental class activities of university experimental teaching turn the extracurricular environment into the learning environment of university experimental teaching, so that students can pay attention to reality. In this paper, the maintenance of equipment in the university experiment teaching experiment class activities of the experimental teaching methods and the role of teachers in the whole time activities, the effect and other things to elaborate.

1.2 Backward management concept

From the whole structure level, instrument management should have scientific knowledge, scientific methods and scientific spirit. The spirit of science is the core of the whole, and scientific methods can discover different scientific methods of knowledge and different scientific spirits. And the world view and values, once there, will eventually enable people to be diligent students. Constantly carry out creative exploration. College students have their unique characteristics of the times for the management of laboratory equipment, their thoughts are more active, and they like to learn happily, but the ideological system of the current school has not been perfected, the mode of education is still relatively single, and the form of education is still relatively rigid. As a result, college students have not fully developed the management of laboratory equipment, and their ability to identify the outside world is still relatively poor, and they are very vulnerable to the constant impact of the external environment. There are very one-sided professional education and research-oriented results, ignoring the ideological education and diversified development of many college students for the management of laboratory equipment. These also aggravate the utilitarian change of college students' learning about the management of laboratory equipment. In recent years, China's development is very rapid, the development of utilitarianism in China is also accompanied

by the process of economic development, in the economic development, many people only care about economic interests, rather than pay attention to moral constraints. They do not care about the way to obtain economic benefits, but only whether the economic benefits are achieved. Many people regard degrees as an economic investment.

1.3 Many idle instruments have low utilization rate, resulting in waste.

Schools should evaluate whether they can use it when they buy it. When teachers begin to teach experimental teaching, they should allocate experimental equipment reasonably. The first is to reform the educational system of the school. In reality, there are many obstacles, so colleges and universities still need to make continuous progress in the process of exploration and innovation. Establish multiple evaluation criteria, so as to constantly encourage students to try their best to get rid of the current state of students, and thoroughly change the way college students manage laboratory equipment only for examinations.

The basic model:

$$\phi_1(k+1/k) = \begin{pmatrix} \phi_{1_1}(k+1/k) & 0 & 0 \\ 0 & \phi_{1_2}(k+1/k) & 0 \\ 0 & 0 & \phi_{1_3}(k+1/k) \end{pmatrix}$$

The second is to constantly innovate the way of learning. We should change the concept of employment and promote diversified employment in society. Faced with the current severe employment situation, the utilitarian management of laboratory equipment by college students will only become more serious, which requires the society to constantly change the strategy of recruiting personnel, so that students can not only study for work, but also promote diversified employment in society. It also requires schools to formulate relevant laws and regulations.

$$\phi_2(k+1/k) = \begin{pmatrix} 1 & T & (T/\tau_{a_2} - 1 + e^{-T/\tau_{a_2}})\tau_{a_2}^2 & 0 \\ 0 & 1 & (1 - e^{-T/\tau_{a_2}})\tau_{a_2} & 0 \\ 0 & 0 & e^{-T/\tau_{a_2}} & 0 \\ 0 & 0 & 0 & e^{-T/\tau_{a_2}} \end{pmatrix}$$

Continuously encourage college students to manage laboratory equipment independently, constantly stimulate college students' awareness of autonomous learning of laboratory equipment management, and constantly change college students' awareness and concept of laboratory equipment management. Influenced by all walks of life, many university campuses are no longer so pure. For the management of laboratory equipment, college students for the management of laboratory equipment, as the main force in the school, are also gradually going to which is its original meaning, the utilitarian nature of college students for laboratory equipment management for learning is also constantly highlighted, which has a great impact on the growth of college students for laboratory equipment management. It has gradually become an urgent problem to be solved in the current society.

1.4 Daily maintenance is not in place.

The maintenance and management of instruments in experimental teaching is the best protection for instruments, and it plays an indispensable role in improving students' sense of responsibility in maintaining instruments. The course of experimental activities is to let students contact the society and understand the society in the maintenance of instruments, so that students can integrate into the atmosphere of the whole society in the maintenance of instruments. It also enables students to understand their position in the whole activity, find their own position, and do their best to complete the activity, which is conducive to improving their sense of responsibility. College students have their unique characteristics of the times for the management of laboratory equipment, their thoughts are more active, and they like to learn happily. However, the ideological system of the current school has not been perfected, the mode of education is relatively single, and the form of education is relatively rigid, which leads to the fact that college students have not fully developed their physical and mental management of laboratory equipment, and their ability to identify the outside

world is still relatively poor. It is very vulnerable to the constant influence of the external environment. There is a very one-sided professional education and research-oriented results, ignoring the ideological education and diversified development of many college students for the management of laboratory equipment, which also intensifies the utilitarian change of college students' learning for the management of laboratory equipment. College students are less interested in the management of laboratory equipment and basic knowledge. When investigating the management of laboratory equipment among 100 college students in a university, more than half of them hold the attitude that they do not want to learn. For example, a science and engineering student does not pay enough attention to advanced mathematics and general physics courses. Many students only go back to study temporarily when they take the exam. Most students should also pay attention to the application of technology, which can bring practical results. For most students, the actual effect can be seen from the course. For the main courses arranged in the university teaching system, most of the educational courses should have some quality theory in management. Many students used to attend classes only to get a diploma, and most of the students did not go to class just to finish the final exam at the end of the semester.

2. Effective Suggestions on Strengthening the Management of Equipment and Instruments

2.1 Reform the management mechanism and carry out unified management

At the beginning of the experiment, there will be a series of design activities for students to maintain the real-name system. First of all, it is necessary to choose the instruments for maintenance. These problems, which seem to arise only in the maintenance and management of laboratory equipment by college students, are now applied to the university campus, and students are required to complete them by themselves. Perhaps many teachers themselves hold a skeptical attitude, they think that college students for the management of laboratory equipment for such maintenance of the instrument, cannot achieve the real purpose. In our previous learning process, the teacher always walked in front of the students, holding their hands and carefully leading them forward. But the experiment class activity is contrary to the experiment teaching in the past, it has put forward the higher request to the teacher, request the teacher no longer to hold the post of the main planner, let the teacher retreat behind the scenes, let the student grasp the initiative, push to the front, but the teacher only is playing the guidance role, helps the student to carry on the self-exploration unceasingly. It is the key factor for students to choose the topic independently and implement the experimental class activities independently, and teachers can only give students some suggestions when they encounter difficulties, when students are confused about choosing the topic, they are prompted to find the topic they need, when students have done their own plan. Teachers should listen carefully to college students' ideas about the management of laboratory equipment and guide them to correct their own mistakes, instead of telling them directly where they are wrong and where they need to change. The experimental course is a course for all students, and the main content is students' autonomous choice and autonomous learning. This is a non-disciplinary course, and the content of the activities it requires can return to the social maintenance and management of children to the maximum extent, so it requires teachers to give students the right to plan the whole activity, so that students can pay attention to those people or things they care about according to their understanding. Use your favorite way of thinking to maintain the problems of the instrument. Teachers should fully believe in students, let students build up their self-confidence, and see that students have been submerged for a long time. Teachers should fully tap the potential of students.

2.2 Purchase with caution

When designing, teachers should fully consider that students are the masters of the whole experiment. Students should make plans and realize the whole process. Teachers should communicate with students as small partners and participate in students' learning. In this way, on the one hand, students can feel the care and enthusiasm of teachers, and experience the pleasure of

exploring wisdom with teachers. Always feel the teacher's concern and create their own image of equality. When the teacher is involved in the whole experiment, the students are more motivated for the whole experiment. On the other hand, it can also accumulate the experience of teachers, improve their experimental teaching level, promote the improvement of their professional quality, and deeply understand the specific situation of each student. Make teachers and students become real communicators, according to these to introduce love equipment, can fully exercise students.

2.3 Maintenance work should be strengthened

As a new type of course, experimental class activity is more and more popular with students. Experimental class activity is a new type of course which is different from other subjects. Therefore, the maintenance work should be strengthened, and the maintenance work will be aggravated when students use it more times, which requires every maintenance personnel to supervise the instrument in real time. In order to avoid a bigger mistake.

2.4 Open up a new road for maintenance

Experimental class activities provide students with a more relaxed cultural atmosphere. In such a learning environment, students feel happy, think more quickly, and their personality can be fully developed. Teachers can consciously maintain the different characteristics or specialties of each student, so that their special talents can be fully explored. Experimental class activities can not only exercise students' hands-on ability, but also exercise students' ability to use their brains, create a good opportunity for students to invent and create, maximize the discovery of students' characteristics, help students to open their eyes, especially students with poor grades, through such activities, students can find another self. Increase your self-confidence and make your personality develop in an all-round way.

Table 1: Results

| | Type1 | Type2 | Type3 | Type4 | Type5 |
|----------------|---------|---------|----------|----------|----------|
| Fusion results | 0.71556 | 0.10018 | 0.085868 | 0.017889 | 0.080501 |

Comparing the two results, it can be seen that the fusion results of the two procedures are the same.

3. Conclusion

Experimental instruments are the basis of scientific research in various schools and the main resources for each university to train high-quality talents. The utilization rate of laboratories reflects the level of higher experimental teaching and scientific research to a large extent. The management level of laboratory equipment has a very direct impact on the quality of experimental teaching in schools. In recent years, with the continuous reform of higher education, the number of students is also increasing year by year. The requirements for practical functions are also increasing year by year.

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