Countermeasures to Strengthen Teaching Facilities in the Information Age

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Abstract: Teaching security management is important for institutions to effectively manage teaching resources. This article takes Xi'an Mingde Institute of Technology (referred to as Mingde Institute) as the research subject and uses the literature review and field investigation to put forward relevant suggestions for the teaching facilities of Mingde Institute, in order to improve the teaching facilities of Mingde Institute.

Keywords: Informatization; Teaching facilities; Management measures

1. Introduction

The quality of teaching facilities affects the construction level and core competitiveness of higher education institutions to a great extent. In the current transformation period of major private universities, many new problems have emerged in the acquisition and processing of teaching support information and the allocation and adjustment of teaching resources. The current material and funds can no longer meet the needs of college teaching, and technical support will become the main content of support works. Some scholars have studied teaching facilities from the aspect of multimedia teaching, briefly introduced the shortcomings in multimedia classroom management in colleges and universities, and put forward suggestions for strengthening multimedia classroom management [1]. Some scholars briefly elaborated on the importance of the digital construction of college education and the application of digital platforms and analyzed the existing problems in the construction of college teaching informatization. Several targeted countermeasures and suggestions have been put forward to further develop and promote teaching management informatization [2], create a good atmosphere, and improve relevant systems. Some scholars have conducted research on the management of computer rooms in universities and found some problems like software and hardware protection issues, power safety issues, etc., and have put forward relevant suggestions [3]. Therefore, it is important to utilize modern computer technology and network technology in teaching facilities to further promote the healthy development of teaching facilities in various universities.

2. Existing problems in teaching facilities

2.1. Multimedia classroom issues

2.1.1. Lack of complete rules and regulations

Due to the lack of standardized systems and processes and unclear management responsibilities, equipment maintenance is not timely and faults cannot be solved quickly [4]. In addition, due to the lack of a reward and punishment system, some poor behaviors cannot be effectively eradicated, resulting in undesirable outcomes.

2.1.2. Outdated classroom equipment

Due to aging, key equipment such as projectors and computers often malfunction, affecting teaching work. In order to ensure the quality of teaching, the equipment needs to be updated regularly to ensure their reliability.

2.1.3. Insufficient provision of professional and technical personnel

The equipment of the multimedia classroom requires the support of professional and technical personnel. However, due to the shortage of technical personnel, there is often a situation of "demand exceeding the supply." Therefore, increasing the number of professional and technical personnel and improving their skill levels is the key to solving this problem.

2.1.4. Traditional multimedia teaching equipment maintenance methods

At present, equipment maintenance mostly relies on traditional means and methods, lacking modern and intelligent maintenance methods. This not only increases maintenance costs, but also reduces maintenance efficiency [5]. Therefore, it is necessary to introduce advanced maintenance methods and technologies to improve the level of equipment maintenance.

2.1.5. Lack of proficiency in using multimedia equipment

Some teachers lack the skills to operate multimedia equipment. This not only affects the teaching effect, but may also cause damage to the equipment. Therefore, teachers need to be trained and guided to improve their proficiency in using multimedia equipment to ensure the quality of teaching.

2.2. Teaching support issues in computer rooms and speech laboratories

2.2.1. Flawed management systems

The management system of computer rooms and speech laboratories is imperfect. This is mainly reflected in the lack of clear rules and regulations, unclear management responsibilities, and lack of effective monitoring mechanisms. These problems may lead to untimely equipment maintenance and equipment failures that cannot be quickly resolved, thus affecting the teaching quality.

2.2.2. Lack of awareness of electrical safety among students

Students' lack of awareness of electrical safety in computer rooms and speech laboratories is also a common problem. Due to the lack of awareness and knowledge of electricity usage, students may operate power cords illegally and connect power sockets without permission, which may easily lead to accidents.

2.2.3. Outdated teaching equipment in computer rooms and speech laboratories

In higher education institutions, due to insufficient capital investment or other reasons, the teaching equipment in computer rooms and speech laboratories may be outdated. These devices may have problems such as low performance and frequent failures, which affect the teaching effects. In addition, the update and maintenance of

equipment is also an issue that needs to be addressed.

2.2.4. Teachers being unfamiliar with the equipment in the computer room and speech laboratory

Due to the lack of relevant training and guidance, teachers may not be familiar with the equipment in the computer rooms and speech laboratories. As a result, the equipment cannot be fully utilized to achieve the best teaching effect.

2.3. Problems in the informatization of teaching
2.3.1. Insufficient understanding of informatization

The lack of understanding of information-based teaching is the core problem in the management of information-based teaching. This is mainly reflected in the insufficient understanding of the importance, necessity, and urgency of informatization, and the lack of understanding of the basic concepts, characteristics, laws, and models of information-based teaching. Due to the lack of understanding, some educators fail to maximize the benefits of information-based teaching in improving teaching quality and promoting educational equity.

2.3.2. Lack of information-based teaching design and resource integration capabilities

The design and resource integration capabilities of informatized teaching are the key to promoting informatized teaching. However, these two aspects are yet to be optimized. Specifically, some educators are unable to effectively use information technology to design courses and cannot integrate various information-based teaching resources according to different teaching contents and goals to design an information-based teaching model suitable for students.

2.3.3. Lack of information-based evaluation and feedback mechanism

The effect of teaching informatization needs to be reflected through scientific evaluation and feedback mechanisms. However, there is a lack of scientific evaluation and feedback mechanisms. On one hand, it is impossible to accurately evaluate learning effects and teaching effects; on the other hand, it is impossible to collect feedback on students' learning situations and problems promptly, and it is also impossible to adjust and improve information-based teaching models and methods promptly.

2.3.4. Insufficient management training and technical support

Management training and technical support are important aspects of promoting informatized teaching. However, in the process of promoting teaching informatization, higher education institutions lack professional information technology talents and management talents, and are therefore unable to provide teachers with sufficient technical support and training.

3. Methods for improving the use of multimedia classrooms
3.1. Establishing and improving people-oriented rules and regulations

The rules and regulations regarding the use, management, and maintenance of multimedia classrooms should be improved, the management responsibilities should be well-defined, and the normal operation of multimedia classrooms and the safety and stability of equipment should be ensured [6]. At the same time, an incentive and evaluation mechanism should be established to encourage teachers to actively use multimedia teaching equipment to improve teaching quality and effectiveness.

3.2. Timely update of obsolete teaching equipment

Old or malfunctioning equipment should be updated or repaired in a timely manner [7]. When updating equipment, its performance, compatibility, and ease of use should be taken into consideration to improve the reliability and stability of the equipment and ensure the highest teaching quality.

3.3. Strengthening the construction of professional teams

The construction of professional teams in multimedia classrooms and the skills of professional and technical personnel should be strengthened. Through regular training and experience exchange, they can master advanced maintenance and management technologies and improve their ability to solve faults [8]. At the same time, the assessment and evaluation mechanism for professional and technical personnel should be improved to encourage them to better serve multimedia teaching.

3.4. Building an innovative multimedia teaching equipment maintenance model

The multimedia teaching equipment maintenance model should be renewed, with the introduction of modern and intelligent maintenance methods and technologies, so as to improve maintenance efficiency and quality. For example, using remote monitoring and online maintenance to detect and solve equipment faults in a timely manner [9] or establishing an equipment fault database to accelerate troubleshooting.

3.5. Strengthening information technology training for classroom teachers

Information technology training should be carried out for classroom teachers to improve their operating skills and maintenance awareness of multimedia equipment. The training content should include the basic principles of equipment, operating methods, common faults, and troubleshooting, etc. At the same time, the teachers will also need to be trained to apply the equipment in their lessons to achieve the best teaching results.

4. Teaching facilities: Computer rooms and speech laboratories
4.1. Strict computer room and speech laboratory management system

(1) Laboratory managers: Laboratory managers should comprehensively manage and maintain the computer rooms and voice laboratories to ensure the normal operation of the equipment and prevent vandalism and theft.

(2) Students: Before entering the computer room and speech laboratory, students must read the relevant rules and regulations of the computer room and speech laboratory, and operate in accordance with the prescribed operating procedures. Besides, they should not be allowed to carry USB flash drives, mobile hard disks, and other mobile storage devices without permission. When entering computer rooms and speech laboratories, it is prohibited to copy, delete, or modify files and data in the devices without permission [10].

(3) Teachers: Teachers should have good professional qualities, abide by the institution's regulations and equipment operation procedures, not dismantle or repair equipment in the computer room and speech laboratory without permission, and not take items that belong to the computer room and speech laboratory outside [11]. If students are found to be operating in violation of regulations during class, they should be stopped immediately and dealt with seriously.

4.2. Upgrading outdated teaching equipment regularly to improve teaching efficiency

The equipment in the computer room and speech laboratory should be upgraded regularly according to the

institution's needs to improve teaching efficiency.

4.3. Posting up regulations and rules of electricity safety system for the user's attention

(1) Electrical safety regulations should be formulated and pasted in a prominent position. This system should include electricity safety instructions, and first aid measures for electric shocks, so as to remind the people entering the computer room and speech laboratory to pay attention to electricity safety [12].

(2) Computer room and speech laboratory managers should regularly perform inspections to ensure that the wires and electrical equipment comply with national safety standards.

(3) Computer room and voice laboratory managers should provide students with necessary anti-shock equipment, such as power strips, etc.

4.4. Strengthening information technology training for classroom teachers

Class teachers are the key to ensuring teaching quality, and the same is true for the teaching facilities like computer rooms and speech laboratories. Therefore, higher education institutions should strengthen information technology training for classroom teachers and improve teachers' proficiency and troubleshooting capabilities in using related equipment, so that teachers can better utilize the equipment.

5. Management measures for teaching information platform
5.1. Strengthen teaching concepts and create a good atmosphere

(1) The publicity and awareness of information-based teaching should be strengthened. This can be achieved by holding lectures, seminars, demonstration classes, and other activities. Through these activities, the necessity, concepts, and advantages of information-based teaching can be made clear to the teachers and students.

(2) A good information-based teaching environment should be created with sufficient software and hardware resources to meet the needs of teachers and students. The campus network construction should be strengthened to achieve full wireless network coverage in the teaching area and improve the convenience of information-based teaching [13].

(3) Teachers should be encouraged to carry out innovative information-based teaching practices and be provided with necessary support and guidance. Besides, information technology should be utilized to improve teaching methods and improve teaching effects and student learning effects [14].

5.2. Scientifically design management systems

(1) A proper teaching information management system plan should be formulated to clarify each work's responsibilities and procedures, and ensure that all works are carried out in an orderly manner.

(2) An information-based teaching resource library that integrates various high-quality teaching resources should be established. At the same time, the quality of teaching resources should also be monitored to ensure the accuracy and reliability of resources [15].

(3) An information-based teaching evaluation mechanism should be established to conduct comprehensive evaluations from aspects such as knowledge mastery, improvement, and learning attitude, so as to comprehensively reflect students' learning situations and teachers' teaching effects.

5.3. Increase system training and learning

(1) Information-based teaching training should be provided to managers, teachers, students, etc., to ensure

that personnel in different positions have sufficient knowledge of information-based teaching.

(2) New teachers should be provided with systematic information-based teaching training to help them quickly adapt to the information-based teaching environment and improve teaching quality and effectiveness.

(3) Teachers should be encouraged to participate in various information-based teaching competitions and evaluation activities. Competitions can be held to improve teaching and learning skills, and also promote the usage of information technology in teaching.

(4) Collaboration with league universities should be improved, so that our institution can learn from the experiences and practices of other advanced institutions and improve the informatization of teaching in our institution.

6. Summary

Strengthening teaching- facilities is an important means to improve teaching quality and realize educational modernization. By improving the teaching equipment, strengthening teacher training, optimizing teaching resources, and other measures, teaching and learning effects can be effectively improved. However, the strengthening of teaching facilities cannot be achieved overnight and requires continuous investment and improvement.

In the future, it is necessary to pay more attention to the application and innovation of information-based teaching, constantly optimize teaching equipment and resources through continuous exploration and practice, promote the organic integration of information-based teaching and traditional teaching, so as to improve the quality of education. At the same time, it is also necessary to actively address the challenges in information-based teaching, such as the digital gap, network security, and other issues. While ensuring the quality of teaching, the needs and abilities of students in different regions and at different levels should be considered to avoid unfairness caused by technological differences. In addition, the strengthening of teaching facilities require the joint efforts and support of the whole society. Governments, higher education institutions, enterprises, and other parties should work together to promote the development of information-based teaching and contribute to the modernization of education and the cultivation of high-quality talents.

Funding

Disclosure statement

The authors declare no conflict of interest.

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