
Spatial Design of Teaching Area in Primary and Secondary School Campus Buildings in China

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Abstract

As China's population continues to increase its economy becomes more and more developed, and the functions of urban development become more and more complete. Well the number of primary and secondary school students in China is constantly increasing and the existing primary and secondary school campus buildings cannot meet the demand. Therefore it is necessary to continuously expand the scale of primary and secondary school building teaching areas. At the same time, the education received by primary and secondary school students is also constantly improving, and the functions of the equipped teaching area units are becoming more and more complete. It is necessary to pay more attention to some details in the design rationally utilize the space and optimize some existing teaching area units. deficiencies, allowing primary and secondary school students to experience richer teaching activities. Therefore, the architectural issues of primary and secondary school campuses have received widespread attention. However, with the construction of the city, the space occupied by campus buildings has been greatly occupied. Therefore, it is necessary to carefully plan the unit space design of the teaching area and establish more complete teaching buildings to meet the learning conditions of students. In terms of physical on the basis of establishing a good learning environment for students.

Keywords: *Teaching Space Design, Teaching Area, Architecture, Primary and Secondary School Campus*

1. Introduction

As China's population continues to increase and its economy develops rapidly the functions of urban development are becoming more and more complete. Well the number of primary and secondary school students continues to increase, and the existing primary and secondary school campus buildings cannot meet the demand. Therefore it is necessary to continuously expand the scale of primary and secondary school building teaching areas. Under such circumstances, the education received by primary and secondary school students is also constantly improving and the functions

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of the equipped teaching area units are becoming more and more complete. It is necessary to pay more attention to some details in the design, use the space more rationally and optimize the current situation. certain teaching conditions.

2. Problems Existing In The Space Design Of Building Units In Primary And Secondary School Teaching Areas

There are few research results on teaching buildings in China so the unit space of the current teaching area is tightly organized. Because of this students cannot have a good learning and activity environment. As a learning and activity place shared by students and teachers the teaching area should not only provide all teachers and students with the space needed for the learning process but also provide students with a more convenient space for learning. Many current teaching areas are not designed to fully utilize the space, resulting in a waste of space and compact unit space. Through survey data research it was found that the unit spaces in the current teaching areas of primary and secondary school buildings are too compact. The reason is that the overall space is not fully utilized and the connections between different teaching spaces are not studied resulting in the inconsistency between the unit spaces in the teaching areas. The combination efficiency is extremely low. For example many teaching public resources such as libraries are placed in a corner or are not integrated into the building in the teaching area which reduces the utilization of the unit space in the teaching area.

2.1 The Diversity Of Teaching Areas Needs To Be Strengthened

Due to the excessive pursuit of space for students to study in primary and secondary school buildings the space is too large during design. Monotony is not conducive to the mental health of primary and secondary school students making students too rigid and lacking in vitality. Therefore, the spatial diversity of the teaching area must be greatly enhanced. Many classroom spaces today are still arranged according to traditional classrooms, resulting in overcrowded and monotonous spaces. The classrooms in the teaching area are next to each other and there is no consideration to set up some shared spaces for teachers and students making the function of the teaching area too single and unable to achieve good teaching effects.

2.2 Space Environment Adaptability Needs To Be Improved

The teaching building requires relatively complete facilities and a large space so it is necessary to choose to build some more suitable environments for teaching areas for students' learning and activities. When designing teaching areas, many current buildings do not pay attention to the climate environment of the site where the building is located and the environment around the building. Many teaching buildings do not pay attention to the relationship between teaching buildings and the climate environment, resulting in the current environment of the teaching area being too harsh, affecting students' learning and life. For example, the space of some schools is too

compact and does not consider issues such as ventilation and lighting. Although many schools have installed air conditioning, heating and other facilities, air conditioning and other tools cannot perfectly improve the impact of the environment, and will still cause Students suffer from physical and psychological discomfort. Some greening on campus will also affect the mental health of students. Therefore, when designing attention should be paid to integrating it with the surrounding environment to establish a perfect theme and protect the physical and mental health of minors.

3. Improving Unit Space Design In Teaching Areas

3.1 Space Design Of Teaching Units In Primary And Secondary School Teaching Buildings

Each space in the teaching area has a corresponding function so more attention should be paid to the space in the design. Loose avoid monotony and uniformity the design should have distinctive features and at the same time, it should perfectly match the local environment. The spatial design of primary and secondary school teaching buildings should change with the changing needs of current primary and secondary school students. Modern education focuses on interaction, experience and individuality. Therefore it is necessary to carry out diversified designs for classroom units and design different combinations of teaching spaces. For example, new attempts such as building libraries within buildings make it more convenient for teachers to teach. Let students have a diversified learning life and improve students' enthusiasm for learning.

3.2 How To Combine Unit Spaces

There are four spatial layouts of the unit space in the teaching area but due to the particularity of the teaching space you can consider combining the three types of unit spaces to varying degrees to meet the functional diversity and teaching functions of the building in the teaching area. The first classroom layout is divided into buildings. Placing ordinary classrooms and professional classrooms in different teaching buildings respectively. Since professional classrooms and ordinary classrooms have different requirements and are placed in different environments it prevents the noise from professional courses from affecting the learning of primary and secondary students in other classrooms. Life. The second type is the mezzanine layout. In some cities land is tight, but there must be a minimum distance of 25m between teaching buildings so that students can fully feel the light. In this case, a mid-corridor layout will be considered

and some ordinary corridors will be set up in the south where there is sufficient lighting. For classrooms professional classrooms are set up in the north which greatly reduces the teaching land. However, this layout will affect the lighting problems in the corridors and professional classrooms making primary and middle school students feel depressed in a cheerful environment. Therefore this kind of layout should be adopted carefully. way of teaching. The third classroom layout is a zigzag layout. This zigzag layout places ordinary classrooms in the south and professional classrooms in the east and west directions, ensuring the care of professional classrooms and perfectly making up for the lack of care in the corridor layout. It also optimizes the orientation of classroom settings and reduces the land occupation area. Therefore most of the teaching areas of primary and secondary schools now adopt this unit space design method. The fourth type of space unit layout also sets up ordinary classrooms and professional classrooms in one teaching building, but this will make the construction of the teaching building more difficult. In addition, the occupied column spans are not uniform which makes the designer increase a certain degree of difficulty in the facade design process. Therefore in order to avoid this problem professional classrooms are set up on the ground floor and ordinary classrooms are above the second floor. The column spans of professional classrooms can also be set up one for each class to meet the current teaching needs. All the above methods require designers to design the unit space of the teaching area according to actual needs and carry out arbitrary combinations to ensure students' learning and life in the building.

4. Adaptation Of Architectural Space Teaching Area To Climate Environment.

The architectural space in the teaching area is the place where modern primary and secondary school students spend the longest time. The environment of a school district's built space can have a profound impact on the physical and mental health of primary and secondary school students. Some current teaching area buildings are too compact due to space reasons, thus reducing the overall environment of the teaching area and ignoring the building's lighting, ventilation, and sunshade needs. Therefore, when designing a building we must pay attention to the requirements for lighting ventilation, and shading and conduct reasonable designs based on the local climate and environment, thereby reducing energy consumption of air conditioners fans etc while also increasing the life of the building and enhancing students' Comfortability of learning.

In the design of adapting the space to the climate environment we adopt three

aspects: lighting ventilation and shading. Measures to deal with the environment and strategies under different conditions to achieve a high-quality teaching environment optimize the overall environmental quality of the teaching area enhance the physical fitness of teachers and students and increase the quality of teaching.

4.1 Lighting Design

Side window lighting is the most common lighting method used in teaching buildings and can completely replace Artificial lighting saves energy. However if this method is unreasonably designed it will cause reflections on the blackboard seriously affecting the quality of students' lectures and resulting in a significant decrease in students' lecture efficiency.

Skylights are set on the roof of the teaching area to bring light into the room through glass. This approach will have an impact on the building. It has very high requirements and must be set up in a teaching area with a large enough space. Therefore many teaching areas today do not use this method.

4.2 Ventilation Design

Natural ventilation is the healthiest way for the human body. Primary and middle school students need more exposure to the environment. Enhance students' physical fitness. Therefore it is necessary to design the architectural layout and architectural space to promote the air circulation of the environment ensure that students have more contact with natural wind and enhance students' physical fitness.

4.3 Shade Design

In the design of the building various methods should be used to avoid direct sunlight and affect the learning environment student learning. Teaching areas are usually designed with balconies high windows deep eaves, concave and convex facades etc. to reduce direct sunlight. Therefore during the design process it is necessary to combine the actual conditions and use a combination of various methods to form a better form of sunshade.

5. Conclusion

This article discusses the usage area of unit space in the teaching area and the space of building units in the teaching area of primary and secondary schools. The problems existing in space design and the unit space design of Ruhai improved teaching area were discussed. China's educational environment is getting better and better and the

functions required by schools are becoming more and more complete. Therefore, in the design process of the campus teaching area we must constantly combine reality and sum up experience, and under the requirements of national standards, the design of the teaching area The unit space is designed and researched to meet the requirements of students and teachers, so that primary and secondary school students can better experience teaching activities.

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