

Researching Theoretical Issues on Standards of Facilities and School Equipments to Meet the Requirements of the New General Education Program of Vietnam

Ngo Van Hung^{1,*}, Nguyen Thi Duyen²

¹Department of Education, Hanoi Metropolitan University, 98 Duong Quang Ham Street, Cau Giay District, Hanoi, Vietnam

²Nguyen Sieu School, Yen Hoa Ward, Cau Giay District, Hanoi, Vietnam

*Corresponding author: hungnv@hmmu.edu.vn

Received May 02, 2020; Revised June 16, 2020; Accepted June 20, 2020

Abstract Researching theoretical issues on standards of facilities and school equipment is the basis of developing standards and managing the facilities and school equipment based on standards, meeting the requirements of the new general education program in Vietnam. This research was conducted based on the reality of the needs of schools nationwide in each region, the guidelines and policies of the Vietnamese government on school facility standards. And the new general education program in Vietnam. By researching the theoretical issues about standard facilities, school equipment that we have obtained a number of results: The concept of standard facilities, school equipment, scientific standard basis on facilities, standard scope of facilities, and school equipment: Requirements on standard of facilities, standard principles of facilities. Developing standards for facilities and equipment at primary and secondary schools is one of the important factors to achieve educational equality, promote educational quality and enhance the general education quality. The implementation of these standards plays a guiding role in standardizing facilities, school laboratories, effectively promoting the balanced development of compulsory education in Vietnam, promoting the developing coordination of education in regional, urban, and remote area, and accelerating the modernization of educational technology and equipment in Vietnam when implementing the new General Education Program starting from the school year 2020 - 2021.

Keywords: *standard facilities, school equipment standards, theory of standards, scope and requirements, general education program 2018*

Cite This Article: Ngo Van Hung, and Nguyen Thi Duyen, "Researching Theoretical Issues on Standards of Facilities and School Equipments to Meet the Requirements of the New General Education Program of Vietnam." *American Journal of Educational Research*, vol. 8, no. 6 (2020): 427-436. doi: 10.12691/education-8-6-10.

1. Introduction

On October 29, 2018, the Prime Minister of Vietnam, Nguyen Xuan Phuc signed Decision No. 1436 / QĐ-TTg Approving the Scheme on securing facilities for preschool and general education programs in the the period 2017-2025 [1]. Implementing this Decision, the Ministry of Education and Training of Vietnam further guides a number of points in organizing the implementation and proposing the Presidents of the People's Committees of the provinces and centrally-run cities to direct agencies. related to the implementation of the works under Official Letter No. 428 / BGDĐT-CSVC dated January 30, 2019 on the implementation of the Project on securing facilities for preschool and general education programs in the period 2017 - 2025 [2], this is the latest and most important legal basis to guide operations for regulatory agencies and educational institutions in implementing the process of "radical and comprehensive innovation." Vietnam's education.

Standard and standard issues, standards management, standards development and management for fields in education and training are increasingly attracting the attention of researchers and educators. sex. Up to now, many topics have been studied at different scales and levels, and initially there were standards applied in practice. According to Assoc.Prof. Dr. Dang Thanh Hung. Standardization in education is considered "as necessary processes to make things and objects in the field of education meet the standards issued and formally applied to education to facilitate progress. and educational development. Standardization in education also has the basic function of orienting educational management, standardizing products, resources, facilities, educational activities, creating an official environment for educational development" [3]. In 2014, the Vietnam Academy of Educational Sciences continued to implement the topic "Standard design of subject results for grade levels and classes of general education according to the orientation of developing students' competence" (code: 2014-37-01), the research team identifies the method and standard design process of subject-oriented competence [4].

In the world, researchers have been interested in the factors that affect student success for many years. Studies conducted in early 1990 have found a positive correlation between facilities conditions and student performance [5]. Indoor air quality, thermal comfort, lighting and daylight, and acoustics are some of the factors that have a positive impact on student learning [6]. According to Fisher Kenn (Canberra, Australia), standard facilities design factors can affect students' behavior and academic performance [7]. Research shows that student achievement will improve if facilities improve, factors such as lighting, temperature, classroom space, height of tables and chairs, etc. Directly affect students' behaviors and learning outcomes as well as educational outputs. The authors Joseph Sunday Owoeye and Philius Olatunde Yara (Uganda) also pointed out the close relationship between school facilities and student's academic achievement by analyzing and comparing students' study results. in different regions with different facilities [8]. Not only the conditions of equipment, geographic location of the school also has a certain impact on the academic performance of students [9].

In 2013, the Virginia Department of Education (USA) issued a "Guide to Technical Facilities of Public Schools in Virginia". In the document, in addition to the provisions on investment procedures, management, supervision of design, construction, the main content is the requirements / regulations, specific standards on the components of facilities. techniques of public schools [10]. In 2013, the Department of Infrastructure (under the Ministry of Education - Science and Technology) and the World Bank Experts Research Team proposed, the Kosovo Ministry of Education - Science and Technology issued "Design Guidelines. school technical infrastructure - Standard and Standard". The document defines necessary space types, sizes and parameters based on the requirements and standards of the Ministry of Education - Science and Technology for public schools in urban and rural areas [11].

The management of school facilities and equipments can not only be based on subjective and emotional opinions, and not only manage at a time but must manage a whole process. It comes from defining the theoretical framework of system management along with sound scientific bases drawn from the rich practices of school facilities and equipments. In order to create a basis for standardizing facilities and equipment and the management of infrastructure and equipment in general schools according to standards, the identification of scientific bases and practical solutions is necessary.

This study presents theoretical issues about standard facilities, school equipment, is the foundation to help build standards and manage system of school facilities and equipment according to standards, meet the requirements. of the new general education program beginning in the 2020-2021 school year in Vietnam.

2. Content

2.1. The Concept of School Facilities and Equipments Standard

The International Education Encyclopedia defines "standard" as the level of excellence required to achieve

special goals; is a measure of what is appropriate; is the desired level of actual or social performance [[12], p.4786]. Standard is a theoretical model of principle, openness and socialization, set out by administrative or professional power, including requirements, criteria and regulations that logically combine each other. identify, be used as a tool to verify things, measure or evaluate activities, jobs, products, services, etc. in a certain field and tend to regulate things This object according to the needs, the desired goal of the management entity or the subject using the work, product or service. "Standards" are provisions about technical properties and management requirements used as "standards" to classify and evaluate products, goods, services, processes, environment and other objects. in socio-economic activities in order to improve the quality and effectiveness of these subjects (According to the Law on Standards and Technical Regulations) [13]. Standard is a regulation on technical characteristics and management requirements used as a standard for classifying and evaluating products, goods, services, processes, environment and other objects in socio-economic activities. Meeting to improve the quality and effectiveness of these subjects [14]. Standards published by an organization in writing to voluntarily apply. ISO quality standards of Vietnam Institute (under the General Department of Standards and Quality) and construction organizations of the Ministry of Science and Technology There are now thousands of standards including basic standards, terminology standards, standard specifications, testing methods and sampling standards, labeling standards, packaging, transportation and storage; in fields such as mechanics, metallurgy, transportation, construction, chemicals, petroleum, minerals, agriculture, food, consumer goods, environment, safety, electronics, and information technology [15,16,17].

The aforementioned components constitute a system of facilities and techniques of various types and some relatively complex technical equipment, such as labs, computers and computers. projector, internet system ... The diverse and abundant features of the system of material and technical facilities create many obstacles in the process of management and use [18]. Teaching aids, whether directly or indirectly, such as classrooms, subject classrooms, offices, cafeteria, sound rooms, toilets, common room, play area, equipment teaching... to meet the physical and emotional needs of individuals [18].

Education economists have proved that the effectiveness of education and training depends in part on the physical and technical qualifications of pedagogical labor. Two very important factors that have a strong impact on the effectiveness of education and training are the qualifications, competence of teachers and the level of facilities and technology of the school. They created a Cobb-Douglass function: $Y = F(L.K)$. In which Y is the effect of education and training; F is a constant; L is the level and capacity of teachers; K is the level of the school's material and technical facilities.

There are a number of studies on school facilities and techniques:

+ The International Labor Organization ADB / ILO (Evaluation Rating criteria for the VTE Institution. ADB / ILO - Bangkok 1997) provides 9 criteria and evaluation points of educational and training institutions for testing sub-Mekong River's countries.

Table 1. Criteria and evaluation points of education and training institutions

No.	Criteria	Maximum Score	Note
1	Philosophy	25	
2	Organization of management	45	
3	Education and training program	135	
4	Management staff - teachers	95	
5	Libraries and resources for teaching	25	
6	Finance	50	
7	School campus and facilities	40	
8	Practice workshops, laboratories, equipment and materials	60	
9	Learner services	35	
TOTAL		500	

The school's infrastructure conditions: campus, facilities - technology and library account for 125/500 overall points.

+ Country Report on Quality Assurance in Higher Education, Bangkok - Thailand, 1998, gives the evaluation rate of education quality assurance conditions of Malaysia with 6 indicators (Table 2).

Table 2. Rate of evaluation of conditions for guaranteeing quality of education in Malaysia

No.	The evaluation index	Rate rating	Note
1	General information about education and training	5%	
2	Teachers	30%	
3	Education program	20%	
4	Facilities and equipments	20%	
5	Management system	15%	
6	assessment	10%	
TOTAL		100%	

Conditions for ensuring physical and technical facilities for training activities account for 20% of the total overall evaluation score. Particularly in our country, when summarizing the experience of advanced schools, it has also been confirmed that school facilities and technology are one of the very important factors.

The concept of school equipment standards: School equipment is a broad concept, including all kinds of equipment used for management, school administration

and teaching equipment. In which teaching equipment accounts for a large number and a great investment in every school.

* Teaching equipment

Teaching equipment (teaching facilities), teaching aids are the terms of a material object that a teacher uses as a means of controlling students' cognitive activities, but also for learning. it is a source of knowledge, a means to help students acquire the theoretical knowledge and help them form the skills and techniques to ensure the implementation of the teaching goals.

Teaching equipment is one of the structural components of the teaching process, because it is a pedagogical means of education for teachers and students. Therefore, there is a relationship with other elements of the teaching process such as: Purpose, content, method and form of teaching organization.

Nowadays, with the rapid development of technology, teaching equipment does not only stop at the utensils, facilities and machines used for the teaching process, but also extends to the system of teaching software, online teaching programs, virtual experiments, models, simulations on computers and projectors. This is an inevitable trend of the 4.0 technology era and modern teaching equipment.

* Equipment management, school administration

School management and administration equipment is a group of equipment mainly used to serve the management and administration in the school. School management equipment serves as both a tool and a means for the school administration, the board of management to manage and operate school components effectively and scientifically, ensuring the connection between departments, management levels in schools and in the education sector. At macro perspective, teaching equipment work has 4 main activities:

- Orientation, direction and instructions for school equipment work;
- Production and supply of school equipment systems;
- Buying school equipment. Building laboratories and subject classrooms at educational institutions;
- Building and developing a team of "officials working in school equipment".

The renovation of general education is carried out synchronously from the renovation of curricula, textbooks, innovating teaching methods, increasing the use of teaching equipment and innovating student assessment and evaluation.

Table 3. Main activities of school equipment

No	Activities	Responsibility
1	Orientation, direction, guidance for school equipment work	- Ministry of Education and Training - Departments of Education and Training
2	Production and supply of school equipment systems	Enterprises producing and supplying school equipment
3	Purchasing the school equipments. Building laboratories and subject classrooms at educational institutions	- Central State budget - Local state budget - Resources from the socialization of educational activities.
4	Building and developing a team of "officials working in school equipment".	State management agencies, educational management agencies, educational and training institutions.

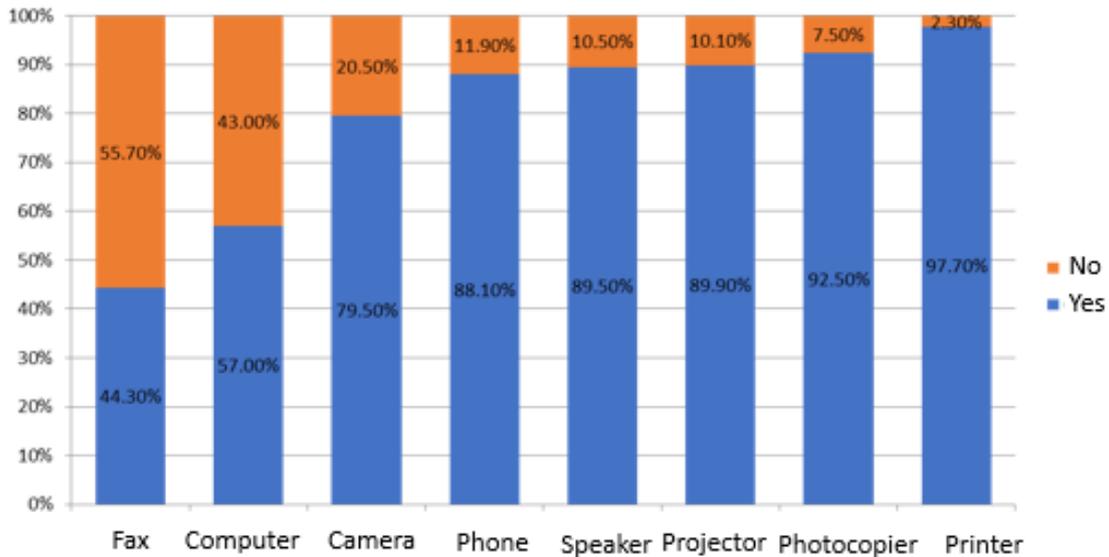


Figure 1. Statistics of the feedback rate on the need of the equipment for administrative administration of the school

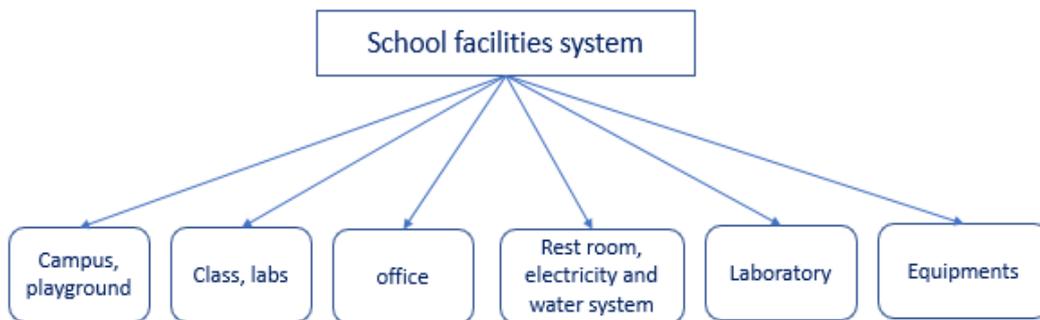


Figure 2. School physical system diagram

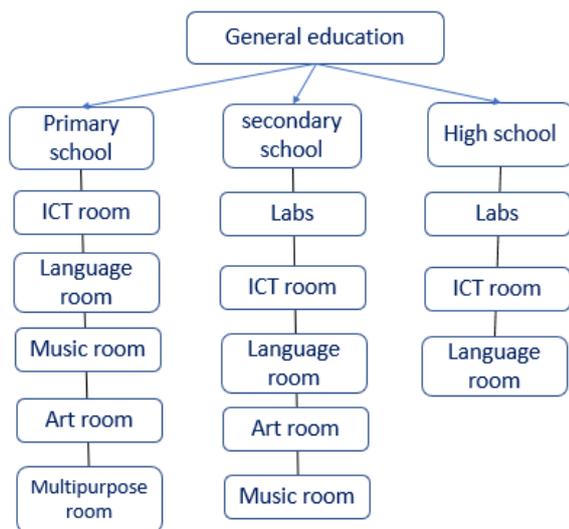


Figure 3. Necessity of specialized room types to meet the new general education curriculum

Facing that situation, managers need not only to plan to implement and supplement teaching equipment (purchase, launch to make teaching aids), and at the same time take measures to organize and manage and preserve the teaching equipment to meet the set requirements. Taking measures is to improve the professional qualifications of the department in charge of

equipment. When the research team found out about the necessity of the listed devices for administrative administration of the school, the lowest evaluation rate of necessity was the fax machine (44.30%); Photocopiers and printers have a very high need for evaluation (both greater than 92%) (Figure 1).

In the school, it is required to ensure a sufficient number of construction blocks: the school must have enough building blocks as prescribed by the Ministry of Education and Training: Learning block, practical labor block, physical training and education block sports, academic service blocks, administration - administration, daily service blocks. The standard content of school facilities and equipment is shown in Figure 2.

The system of classrooms and subject classrooms is an important component of ensuring the teaching and learning activities of the school (Figure 3).

2.2. The Basis of School Facilities Standard

2.2.1. Legal Basis

a. Direction and management documents of the National Assembly

Pursuant to the National Assembly's Resolution No. 88/2014 / QH13 dated November 28, 2014 on renovating street programs and textbooks; Resolution No. 51/2017 / QH14 dated November 21, 2017 of the National

Assembly adjusting the roadmap for implementing new general education textbooks and programs according to Resolution No. 88/2014 / QH13 dated November 28, 2014 of National Assembly on renewing curricula and textbooks for popular education.

Pursuant to the June 14, 2005 Education Law; Law amending and supplementing a number of articles of the Education Law of November 25, 2009; Law No. 43/2019 / QH14 June 14, 2019 Education Law, Clause 2, Article 3 stipulates "Educational activities are conducted according to the principles of learning accompanied by practice and theory associated with practice and education. school education combined with family education and social education".

b. Documents guiding and managing the Party and State

Resolution No. 29-NQ / TW Hanoi, November 4, 2013 "On fundamental and comprehensive renovation of education and training, meeting the requirements of industrialization and modernization in market-oriented conditions. socialist and international integration". Innovating educational programs at all levels, including general education programs towards developing quality and capacity, is one of the important tasks of the Ministry of Education and Training.

Decree No. 69/2017 / ND-CP dated May 25, 2017 of the Government defining the functions, tasks, powers and organizational structure of the Ministry of Education and Training; Decree No. 75/2006 / ND-CP of August 2, 2006, detailing and guiding the implementation of a number of articles of the Education Law; Decree No. 31/2011 / ND-CP dated May 11, 2011 of the Government amending and supplementing a number of articles of the Government's Decree No. 75/2006 / ND-CP of August 2, 2006, stipulating expenditures detail and guide the implementation of a number of articles of the Education Law; Decree No. 07/2013 / ND-CP dated January 9, 2013 of the Government amending Point b Clause 13 Article 1 of Decree 31/2011 / ND-CP dated May 11, 2011 amending and supplementing a number of Article 75 of the Government's Decree No. 75/2006 / ND-CP of August 2, 2006, detailing and guiding a number of articles of the Education Law; ... Decision No. 1436 / QD-TTg Approving the Scheme on securing facilities for preschool and general education programs for the 2017-2025 period.

c. Instruction and management documents of Ministry of Education and Training

Circular No. 17/2018 / TT-BGDĐT, August 22, 2018 Promulgating regulations on education quality accreditation and recognition of national standards for primary schools, in Chapter II primary schools have Article 9. Standard 3: Facilities and teaching equipment, ...

Circular No. 18/2018 / TT-BGDĐT, August 22, 2018 Promulgating the Regulation on education quality accreditation and recognition of national standards for junior high schools, high schools and high schools have many levels of education in Chapter II High school assessment criteria are Article 9. Criterion 3: Facilities and teaching equipment, ...

Circular No. 32/2018 / TT-BGDĐT, December 26, 2018, issuing the general education program. Official Letter No. 428 / BGDĐT-CSVC dated January 30, 2019 on the implementation of the Project on securing facilities

for preschool and general education programs for the period of 2017 - 2025. September 28 / 2018 Ministry of Education and Training issued Official Letter No. 4470 / BGDĐT-CSVC on the implementation of tasks on material facilities and teaching equipment in preschool and general education institutions. identified facilities and school equipment as the basis for implementing the program.

2.2.2. Practical Basis

a. Background of Vietnam education reform today

Conditions on facilities, educational equipment to implement the new general education program: The area of the campus and the requirements of green, clean, beautiful and airy to ensure the regulations, gates, nameplates of schools walls or surrounding fences as prescribed, playground, outdoor practice as prescribed. The number, specifications, quality and equipment of classrooms must be in accordance with the minimum regulations of the school charter, the size, materials, structure, style and color of the student's desks and chairs, ensuring Regulations of the Ministry of Education and Training, the Ministry of Science and Technology, the Ministry of Construction, the Ministry of Health, the sizes, colors, and way of hanging boards in class ensure the regulations on school sanitation and the Ministry of Health.

In the block of studying services, the administrative administration block and the subject classroom (For junior high and high school) meet the minimum standards as prescribed. The library meets the standards of a general library in accordance with the regulations of the Ministry of Education and Training, has classroom bookcases, and the library's activities have the effect of developing the reading culture, encouraging and meeting the reading needs, research, teaching of officials, teachers, staff and students. Supplemental books, newspapers and reference materials annually to meet the requirements of teaching new curriculum.

One of the highlights is the difference for each learner's particular purpose. Each student has different learning needs and abilities. Technological advances allow educators to design learning pathways that are specific to each specific case. Educational software has been put into use, adapting to each student's ability and allowing students to study at a pace that suits their needs. Technology development has a great influence on the role of the teacher in the classroom. Technology-assisted school management systems can provide a data system that helps teachers track the progress of each classroom, thereby providing immediate feedback on the challenges students face. are encountered.

These changes are a reminder of how education models can work in the future: computers act as personal support tools in the classroom with a variety of learning pathways. Teachers and parents are better equipped to understand the student's learning process; The class is divided into small groups of students with appropriate qualifications and skills to work together.

b. Situation of school facilities in Vietnam today

We conducted a survey of the current situation of the response of school facilities and equipment, and the current regulations on management of school facilities and

equipment, including 4 Northern provinces (Hanoi), Ha Giang, Thai Binh), 2 southern provinces (Ho Chi Minh City, Ca Mau), 2 central provinces (Kon Tum, Da Nang, Phu Yen) in 2018:

- Survey purpose: Conduct a practical survey of the level of response to school facilities and equipment and current regulations on management of school facilities and equipment as a basis for standard construction and manage school facilities and equipment according to standards to meet the requirements of the general education program (2018).

- Survey content:

+ The management, direction and guidance of the educational management agencies on the implementation of facilities, school equipment and management of facilities and school equipment at the facility's general education;

+ Actual situation of implementing physical facilities and school equipment at the current general education institutions.

- Survey method:

+ Survey via questionnaire on the actual quantity, status and efficiency of using school facilities and equipment, regulations on management of school facilities and equipment, advantages and limits constraints in the response of school facilities and equipment when implementing the general education program;

+ Direct observation of the physical environment of schools, classrooms, teaching equipment rooms, laboratories, subject classrooms to study and assess visually the actual situation of the quantity and condition of facilities and school equipment of general education institutions.

- Survey subjects and samples:

+ Subjects participating in the practical survey include: Department leaders; Room leaders; School management staff; Officials / Staff working in school equipment; teacher.

+ How to choose the participants of the survey as follows:

+ Representative unit responds to the survey: select all 63 provinces across the country; each province chooses 1

Level Leader, 4 Room Leader, 20 Primary School Managers, 15 Middle School Managers and 10 High School Managers;

+ The mission combines to collect information through questionnaires and conduct field observations right in the area of the unit. Representatives for fieldwork: select 8 provinces including 4 northern provinces (Hanoi, Ha Giang, Thai Binh), 2 southern provinces (Ho Chi Minh City, Ca Mau), 2 Central provinces (Kon Tum, Da Nang, Phu Yen); each province selects 5 upper secondary schools (ensuring adequate primary, lower secondary and upper secondary schools in good, medium and poor regions); Each school chooses 1 principal / vice principal, 1 officer / staff to work in school equipment, 12 teachers (for elementary schools), 13 teachers (for junior high schools), 13 teachers (for high schools). Each subject will answer a questionnaire. The survey results are analyzed, evaluated and synthesized by the research team in the thematic report "Surveying the actual situation of facilities, school equipment and the regulations on management of school facilities and equipment. current learning compared to the requirements of the new general education program ". We have statistics of the percentage of schools meeting the campus area standard by region and region at three levels (Table 4).

Thus, there is a significant difference in the proportion of primary schools meeting the standard of area (m^2) of the campus/1student between urban and rural areas, and mountainous areas with statistical values obtained. respectively, 61.4% compared to 95.0% of the total number of answers answered by each locality. By urban area, the Red River Delta and the Southeast are the two regions with the lowest percentage of schools meeting the area standard of $6 m^2/1$ pupil compared to the remaining 5 regions with the the products are 42.1% and 53.8% respectively. For rural and mountainous areas, the Mekong River Delta has the lowest percentage of schools that meet the campus area standards (90.5 percent) compared to the remaining six regions but the difference is not significant (Table 5).

Table 4. Statistics of percentage of primary schools meeting campus area standards

region		Campus area standards					
		Urban (From $6 m^2 / 1$ student or more)			Rural and mountainous areas (From $10 m^2 / 1$ student or more)		
		Responded	Not respond	Total	Responded	Not respond	Total
Northeast	No	14	9	23	159	6	165
	Percentage	60,9	39,1	100,0	96,4	3,6	100,0
Northwest	No	12	8	20	157	10	167
	Percentage	60,0	40,0	100,0	94,0	6,0	100,0
Red river delta	No	16	22	38	133	8	141
	Percentage	42,1	57,9	100,0	94,3	5,7	100,0
North Central	No	14	8	22	52	1	53
	Percentage	63,6	36,4	100,0	98,1	1,9	100,0
Middle South	No	80	34	114	145	1	146
	Percentage	70,2	29,8	100,0	99,3	0,7	100,0
South East	No	35	30	65	92	6	98
	Percentage	53,8	46,2	100,0	93,9	6,1	100,0
Mekong Delta	No	52	29	81	134	14	148
	Percentage	64,2	35,8	100,0	90,5	9,5	100,0
Total	No	223	140	363	872	46	918
	Percentage	61,4	38,6	100,0	95,0	5,0	100,0

Table 5. Statistics of percentage of lower secondary schools meeting campus area standards

region		Campus area standards					
		Urban (From 6 m ² / 1 student or more)			Rural and mountainous areas (From 10 m ² / 1 student or more)		
		Responded	Not responding	Total	Responded	Not responding	Total
Northeast	No	22	0	22	146	5	151
	Percentage	100,0	0,0	100,0	96,7	3,3	100,0
Northwest	No	13	1	14	158	9	167
	Percentage	92,9	7,1	100,0	94,6	5,4	100,0
Red river delta	No	17	11	28	105	3	108
	Percentage	60,7	39,3	100,0	97,2	2,8	100,0
North Central	No	15	2	17	49	1	50
	Percentage	88,2	11,8	100,0	98,0	2,0	100,0
Middle South	No	47	7	54	127	1	128
	Percentage	87,0	13,0	100,0	99,2	0,8	100,0
South East	No	26	18	44	88	9	97
	Percentage	59,1	40,9	100,0	90,7	9,3	100,0
Mekong Delta	No	29	29	58	83	6	89
	Percentage	50,0	50,0	100,0	93,3	6,7	100,0
Total	No	169	68	237	756	34	790
	Percentage	71,3	28,7	100,0	95,7	4,3	100,0

Table 6. Statistics of percentage of high schools meeting campus area standards

region		Campus area standards					
		Urban (From 6 m ² / 1 student or more)			Rural and mountainous areas (From 10 m ² / 1 student or more)		
		Responded	Not responding	Total	Responded	Not responding	Total
Northeast	No	8	2	10	136	6	142
	Percentage	80,0	20,0	100,0	95,8	4,2	100,0
Northwest	No	5	0	5	153	9	162
	Percentage	100,0	0,0	100,0	94,4	5,6	100,0
Red river delta	No	20	6	26	75	4	79
	Percentage	76,9	23,1	100,0	94,9	5,1	100,0
North Central	No	11	0	11	39	2	41
	Percentage	100,0	0,0	100,0	95,1	4,9	100,0
Middle South	No	42	8	50	97	3	100
	Percentage	84,0	16,0	100,0	97,0	3,0	100,0
South East	No	27	16	43	70	4	74
	Percentage	62,8	37,2	100,0	94,6	5,4	100,0
Mekong Delta	No	40	9	49	48	3	51
	Percentage	81,6	18,4	100,0	94,1	5,9	100,0
Total	No	153	41	194	618	31	649
	Percentage	78,9	21,1	100,0	95,2	4,8	100,0

Based on the data processing results in Table 6, the proportion of lower secondary schools meeting the area (m²) of the campus / 1 student in rural and mountainous areas is higher than that of the secondary schools. urban (95.7% compared to 71.3%). Regarding urban areas, the three regions of the Red River Delta, the Southeast and the Mekong River Delta had the lowest percentage of schools that met the criteria for campus area compared to the remaining four regions when the statistical values were obtained respectively 60.7%, 59.1% and 50.0%. For rural and mountainous areas, the Southeast has the lowest proportion of schools meeting the campus area standard of 10 m² / 1 student (90.7%) compared to 6 other regions. again, but the level of difference is not much (Table 6).

In general, the proportion of high schools meeting the area (m²) of the campus / 1 student in rural and mountainous areas is higher than that of urban areas (78.9% compared to 95.2%). In terms of urban areas, similar to the two levels mentioned above, the Red River Delta and the Southeast are still the two regions with the

proportion of high schools meeting the area standard (m²). The campus / student is the lowest among the remaining 5 regions with the statistical values of 76.9% and 62.8%, respectively. For rural and mountainous areas, the Mekong River Delta is the region with the lowest percentage of schools meeting the standard area of the campus from 10 m² per student (94.1%) compared to the remaining 6 regions. again, although the difference is not really clear.

Management of school facilities and equipment Summarizing the answers of the managers of the department and the Education and Training Department about inappropriate content in the current system of legal documents related to management. In terms of facilities and school equipment, we set out the following focus groups:

- The maintenance of school facilities and equipment has not been specified by the specialized writing system, so there is no binding on the allocation of annual non-business funding for this work.

- There is no regulation on assigning tasks to the Department of Education and Training to guide investment and uniform management of school facilities and equipment leading to inconsistencies, with the phenomenon that each locality implements a; Centralized bidding is a framework contract undertaken by a financial management agency. The user unit (the school) cannot manage the contractor, so the quality assurance and the warranty on assets provided are not really effective;

- There are no instructions on how to calculate the wear and tear of school equipment, which makes schools confused in making new and additional plans; There is no clear payroll and financial mechanism for officials and teachers working in school facilities and equipment, so the schools face many difficulties in managing and effectively exploiting school equipment. learn; Regulations on the proportion of funding for new procurement, maintenance of annual school facilities and equipment at educational institutions are not specific. The determination of funding sources to ensure that material foundations and equipment in educational institutions is unclear with investment sources makes it difficult to allocate funding for implementation;

- There is no document on norms for specialized equipment as prescribed by the Government, so the locality has no advisory base for the provincial / district People's Committee; For densely populated areas, the land for construction of schools is difficult in each specific case to prepare a plan to upgrade the existing works. The area of land / student is very difficult to ensure when the student scale increases but there is no land for expansion. For urban schools in urban / urban areas, population size is growing but there is no budget to build new classrooms, classrooms to meet the requirements of the general education program. very difficult; Regulations on concentrated procurement are carried out through many units and stages with cumbersome procedures that delay the assurance of facilities and teaching equipment for teaching and learning activities. Some groups of equipment have to be procured in focus, so sometimes they are passive and lack equipment to timely serve teaching and management activities; No regulation on modern equipment in the list of minimum equipment such as computers, teaching, foreign language learning equipment, etc.

2.3. Standard Scope of Facilities, School Equipment

Article 16 of Decree No. 75/2006 / ND-CP of August 2, 2006, detailing and guiding the implementation of a number of articles of the Education Law and Decree No. 31/2011 / ND-CP of May 11, 2006 2011 amending and supplementing a number of articles of the Government's Decree No. 75/2006 / ND-CP detailing and guiding the implementation of a number of articles of education law, educational establishments in the education system The Vietnamese nation today includes schools and other educational institutions.

2.3.1. Requirements on Facilities Standards

Improve learning experience and success of learners: Standard facilities, school equipment must improve the

learning experience and success of learners. Schools now face a range of changing educational needs - from learners, society and the labor market. To help them respond, there is a need for a modern approach to teaching and learning and managing school education systems. Standard facilities must allow students to mobilize a combination of knowledge, skills and other personal attributes such as interest, belief, will, ... to successfully perform a certain type of activity, achieve desired results under specific conditions. In addition to forming and developing the common qualities and competencies of the educational program, the experiential activities also focus on forming and developing specific competencies for students: Organizational capacity, organization and management of life, self-awareness and positive self-improvement, career orientation and career selection. General education program 2018, "Experimental activity" for all students from grades 1 to 12 is an activity to help students apply the knowledge, knowledge, skills, attitudes learned from home school and my experiences in creative life.

Improving national plans and support services: Standard facilities and school equipment must guide all those involved in the planning, programming, design and construction of facilities. new school or renovate existing school facilities. Standard facilities and school equipment must guide design for public sector schools, but they are also used by private sector stakeholders. These include:

(i) All professionals involved in the design and construction of schools, including professional design firms, consulting firms, architects, engineers and other design professionals;

(ii) Government, Ministry of Education and Training, provincial / city government with directors of the Department of Education and Training, other public or state administrative agencies, school principals or directors, councils administrators, administrators and teachers

Building stronger bridges between education and the community: Standard facilities and school equipment must build stronger bridges between education and the community. The pace of technological change requires a great step forward in the cohesion between Education and Business. Not only within the Enterprise but also the benefits of cooperation. Great opportunities also exist for cooperation in the economic and social development of Vietnam in the coming years. Progress towards achieving this goal includes: new schools open by using protocols to address the diversity in the number and scope of schools that serve to restructure the process of diversification; switching skills including national skills and regional skills; develop strong business involvement to meet skills needs; courses for converting information technology skills, redesigning apprenticeships and trainees; World-class research and cooperation projects help us improve international accessibility through education and training services. In 2019 and beyond, we will continue to issue relevant legal documents, improve post-graduate education options, and work with businesses to strengthen links to optimize. mutual benefit.

Help educational service providers continue to improve: Standard facilities and school equipment must help education service providers continue to improve. Providing quality is the foundation for the success of the

education and training system. The fundamental role that leaders and teachers seek to enhance the capacity of the system to continue to improve and provide the highest quality education and training services to learners.

Management and use of facilities must ensure science and safety: Standard facilities must help manage and use facilities to ensure science and safety. From analyzing the purpose, content, and communication method of each specific lesson and subject, clearly defining the tasks of each type of teaching technical equipment used in that subject or lesson. From there select and determine how to use it appropriately to bring about high efficiency.

Management and use of facilities must ensure planning, system and synthesis: Teachers and learners when using teaching techniques must have specific plans, contact and coordination. closely with the agencies operating and managing such vehicles; Need to determine in advance what kind of use, time, location, users.

The use of teaching techniques must ensure the systemality for each lesson, subject and the entire curriculum. Ensuring the succession in receiving knowledge, perfecting the skills and skills. At the same time, it is required to use a combination of existing teaching techniques (due to being equipped or self-made), combining the use of rudimentary and modern facilities, between modern technical equipment and Traditional means to help students master the nature of learning problems.

Teachers and learners must prepare thoroughly, fully and thoroughly use the facilities before use: The preparation of teaching techniques for each subject, specific lessons must be completed before going into that lesson or subject. Must master and master the technical operations using them, ensuring safety, saving, and using them, especially for modern teaching and learning means that are regularly maintained and maintained. by the way.

Management levels must incorporate measures to promote the effective use of school facilities:

Management levels need to know the combination of many measures to motivate and encourage people, and at the same time, they need to have specific measures really necessary for the widespread use of teaching technology. regular and continuous nature in order to maximize the effectiveness of technical teaching facilities.

2.3.2. Principles of Standard Facilities

Equality of educational opportunities is one of the top principles: Equipping fully and synchronously facilities and techniques to serve the education and training of the school (synchronous between campus with the mode of organization of teaching; between programs, textbooks and educational equipment; between equipment and conditions of use; between equipment and storage; between devices together ...).

Quality assurance for the development of schools: Reasonably arranging elements of material and technical facilities in the school area, in classrooms, in functional rooms; rationally arrange the location of the school in the residential area, in accordance with the local master plan in order to make the process of teaching and educating teachers and students' learning happen effectively and effectively. Save time and effort.

Ensuring continuity and transition in developing learners Create a whole pedagogical physical environment, favorable for educational and teaching activities; health hygiene conditions, safety conditions, aesthetic conditions, making the school a clean, quiet, transparent and necessary face for an educational institution.

Creating a learning and development network in school education: Exploiting and effectively using material and technical facilities in improving the quality of teaching and education, not letting facilities technology is dead in the stores, which must make every student enjoy the cognitive quality brought about by those facilities.

Well organize the protection, maintenance and maintenance of the school's material and technical facilities because it is a valuable asset in the service of education.

3. Conclusion

Through research practices and survey results of high school units, we draw some conclusions:

3.1. We have not had a unified and consistent standard for both facilities and equipment so far, the management of facilities and school equipment does not have a scientific basis for standardization. School facilities and equipment are all material facilities mobilized for teaching, learning and other educational activities to achieve educational goals.

3.2. The system of school facilities and equipment is a diverse system in terms of number, types and has some relatively technically complex parts. The diversity and abundance of school facilities and equipment create a lot of favorable conditions for managers, teachers and students to use and exploit. School facilities and equipment are designed to serve specific purposes. Within the school system, the diversity of school facilities and equipment creates favorable conditions for teaching and learning.

3.3. A school is a cultural and educational project with a large investment and long-term use, and a place for conducting concentrated education and teaching activities must be considered and accounted in accordance with the immediate and long-term task. Additionally, to be suitable for future-oriented education and training, ensuring the requirements of school hygiene and safety, as well as ensuring that the basic process at school is teaching and learning together integrated in activities.

3.4. Reasonable arrangement of the facilities in the school area, the location of the school in the residential area will be making the process of teaching, education of teachers and school attendance more effective, time-saving and energetic. Creating the entire pedagogical material environment, health hygiene conditions, safety conditions, aesthetic conditions will be making the school always have a clean and peaceful surrounding that is necessary for an educational institution. The sufficient, aesthetic conditions have a psychological effect, increases the intellectual productivity of teachers and students, and works to educate people about lifestyle, hygiene and aesthetics. Building a scientific basis for standard facilities, school equipment and managing school facilities and

equipment according to standards is a very urgent and necessary issue to ensure the successful implementation of the Chapter. school education program (2018).

3.5. We would like propose to the Ministry of Education and Training: To promulgate a circular on school facilities and equipment standards for schools based on recommendations on standards and criteria for infrastructure standards. and prepare school equipment for elementary, middle and high schools; Local leaders (People's Committee of provinces / cities; Department of Education and Training; Department of Education and Training and schools) propose measures to effectively manage and use the facilities system, standardised school equipment.

3.6. In my perspective, we kindly hope that UNESCO will take this into account to share your thoughts to not only Viet Nam but also any other countries about the standards of school in order for all of us to refer and develop more in the near future.

Acknowledgements

The author thanks for the cooperation of the members of the project "Researching the scientific basis of standard building and management of standard school facilities and equipment, meeting the requirements of the new general education program code KHGD/16-20.ĐT.026.

References

- [1] Prime Minister of Vietnam, 2018, Decision No. 1436 / QĐ-TTg Approving the Scheme on securing facilities for preschool and general education programs for the 2017-2025 period.
- [2] Vietnam Ministry of Education and Training, 2019, Official Letter No. 428 / BGDĐT-CSVC on the implementation of the Project on securing facilities for preschool and general education programs for the period of 2017 - 2025.
- [3] Dang Thanh Hung (Chairman), 2003, The scientific basis of standardization of general education, Ministry of Science and Technology Project, code B2003 - 49 - 56, Institute of Strategy and Curriculum education, Hanoi.
- [4] Vietnam Academy of Educational Sciences, 2014, Topic "Standard method of designing subject results for grade levels and classes of general education in the direction of developing students' capacity" (Code: 2014 -37-01).
- [5] Cash, C., 1993, A Study of the Relationship Between School Building Condition and Student Achievement and Behaviour. D.Ed. Dissertation, Blacksburg, Virginia Polytechnic Institute and State University.
- [6] Earthman, G., 1998, The Impact of School Building Condition on Student Achievement and Behaviour. The Appraisal of Educational Investment Conference, Luxembourg, European Investment Bank and the Organisation for Economic Cooperation and Development.
- [7] Fisher, Kenn, 2010, The Impact of School Infrastructure on student Outcomes and Behaviour. Schooling Issues Digest. Produced by Rubida Research Pty Ltd. Commonwealth Department of Education, Training and Youth Affairs (DETYA) became the Commonwealth Department of Education Science and Training (DEST).
- [8] Joseph Sunday Owoeye PhD, Philius Olatunde Yara PhD, July 2011, School Facilities and Academic Achievement of Secondary School, Agricultural Science in Ekiti State, Nigeria; Asian Social Science, Vol. 7, No. 7. 64-74.
- [9] Russell A. Horswill, 2011, The effects of school building condition and school geographical location on student achievement in Alberta, University of Phoenix, United States.
- [10] The Virginia Department of Education (USA), 2013, A Guide to Technical Infrastructure for Public Schools in Virginia.
- [11] Kosovo, 2014, Design Guidelines for School Facilities –Norms and Standards.
- [12] Penelope Peterson, 2010, International Encyclopedia of Education, Elsevier Science; 3 edition.
- [13] National Assembly of the Socialist Republic of Vietnam, 2006, Law on Standards and Technical Regulations, No. 68/2006 / QH11.
- [14] James P. Spillane, Megan Hopkins, Tracy M. Sweet, 2018, School District Educational Infrastructure and Change at Scale: Teacher Peer Interactions and Their Beliefs About Mathematics Instruction, American Educational Research Journal, Vol 55, Issue 3, 2018. 532-571.
- [15] Vietnam Ministry of Science and Technology, 2011, TCVN 3909: 2011, Preschools - Design requirements.
- [16] Vietnam Ministry of Science and Technology, 2011, TCVN 8793: 2011, Primary schools - Design requirements.
- [17] Vietnam Ministry of Science and Technology, 2011, TCVN 8794: 2011, High School - Design requirements.
- [18] Vietnam Ministry of Science and Technology, 2005, TCVN 7490: 2005, on Ergonomi - Tables and chairs for primary and secondary school pupils - Requirements for basic dimensions according to students' anthropometric indicators.

