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### Strengthening the management of the use of teaching equipment in secondary school in Vietnam

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#### Abstract

Teaching equipment management is an indispensable element in the process of managing teaching activities. Teaching equipment is a material means to serve the process of renewing teaching methods, helping teachers and students effectively implement teaching objectives. Innovating the

management of procurement of teaching equipment in lower secondary schools, helping teachers to impart knowledge and make lessons livelier, contributing to improving teaching quality and promoting creativity of teachers and students' active acquisition of knowledge.

**Keywords:** Management, Teaching Equipment, Teaching Methods, Teacher, Pupil, Management Innovation, Secondary School

#### 1. Introduction

Teaching equipment is one of the necessary conditions for teachers to well implement educational, re-education and intellectual development content. thereby arousing students' intelligence, creativity, independent thinking and cooperation ability. In the teaching process, teaching equipment is both a tool to help teachers reduce labor and transmit information to improve students' cognitive process, as well as a rich source of knowledge, arousing curiosity, creativity, stimulating interest in learning, developing students' systematic thinking and practical skills and techniques. it bridges the gap between diverse theory and rich practice <sup>[1]</sup>. Teaching equipment is identified as an important element of the teaching process, with a great role in innovating teaching and learning methods. If the effective management and use of teaching equipment will make an important contribution to improving the learning quality of students in particular and the quality of teaching in general of the school from preschool to university. Teaching equipment at the lower secondary level, in addition to contributing to the innovation of teaching and learning methods, is also of great significance in the process of perception, skill training, and techniques <sup>[2]</sup>. Educational innovation and modernization of teaching equipment are increasingly decisive for the survival of an education and a country. especially, our country-built socialism from a backward agricultural country, slowly developing both sequential steps and leaps, etc. to shorten the gap with developed countries in the world.

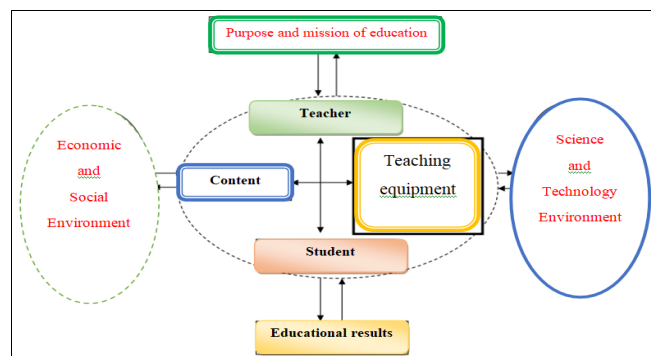
Teaching equipment management is an indispensable element in the process of managing teaching activities. Teaching equipment is a material means of teaching to serve the process of innovating teaching and learning methods, helping teachers and students effectively implement the goals of teaching activities <sup>[3]</sup>. Therefore, there are many research works at home and abroad that have mentioned this issue. In fact, at present, the management of teaching equipment in secondary schools in Tan An city, Long An province has not been paid due attention, lack of strict direction and regular inspection. On the other hand, there are many shortcomings in the provision of teaching equipment for high schools in general: lacking, untimely, asynchronous, etc., so the effect of teaching equipment has not been brought into play. The teachers' use of teaching equipment is still limited, afraid to practice, etc. People's thoughts are still heavy on the subsidy mechanism to ask for teaching equipment, and have not paid attention to the preservation of teaching equipment. learn for long term use. Schools have not paid enough attention and investment in procurement, use and preservation, so the effectiveness of using teaching equipment is not high. This article presents strengthening the management of the use of teaching equipment in secondary school in Vietnam

#### 2. Content

##### 2.1 Teaching equipment

According to Lotx Klinbo <sup>[4]</sup>, teaching equipment, also called teaching equipment, is all the necessary physical teaching means for teachers and students to organize and conduct reasonable and effective use in the teaching process. study in all subjects and grades.

Vu Trong Ry's point of view [5]: thiết bị, teaching medium, teaching tool is a term that refers to a material object or a group of material objects that teachers use as a means of teaching and learning. cognitive activities of students. Students see it as a source of knowledge, a means of teaching to help students understand concepts, laws, and scientific theories, forming in them skills and techniques to ensure the realization of teaching goals [5].



**Fig 1:** Teaching equipment with cognitive activities of students

According to author Tran Quoc Duc: Teaching devices are physical objects used by teachers as teaching means to organize and control learners' cognitive activities in order to achieve teaching goals [6, p.1].

According to Article 1 of the regulation on educational equipment of the Ministry of Education and Training in Vietnam [7]: teaching equipment includes equipment for teaching in class, laboratory equipment, and gymnastics equipment. sports equipment, music-graphic equipment and other equipment in school workshops, school gardens, and traditional rooms to ensure the improvement of the quality of teaching activities, and to contribute to the realization of comprehensive educational goals.

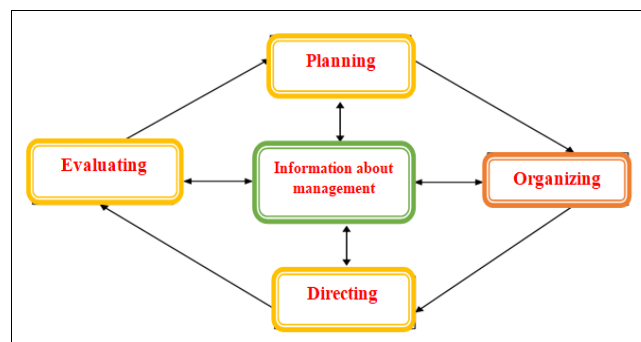
Inheriting the above views, we believe that: teaching equipment is a system of equipment and tools to support teaching activities, aiming to improve the quality of teaching and of teachers and students. Teaching equipment is a material means of teaching to serve the process of innovating teaching and learning methods, helping teachers and students effectively implement the goals of teaching activities. Teaching equipment also creates direct conditions for students to promote initiative, develop creativity in acquiring knowledge, contributing to improving the quality of comprehensive education.

## 2.2 Management and management of teaching equipment

According to Karol Koon [8] "management is an essential activity that ensures the coordination of individual efforts to achieve group goals. The goal of every manager is to create an environment in which people can achieve group goals with the least amount of time, money, and personal dissatisfaction. As practice, management is an art, and organizational knowledge of management is a science [9, p. 33].

Management function is a special type of management activity, formed from the process of division, cooperation of labor and specialization in management, expressed through the reciprocal properties of the fragmented parts of

management: (1) Planning, (2) Organizing, (3) Directing the implementation and (4) Checking and evaluating.



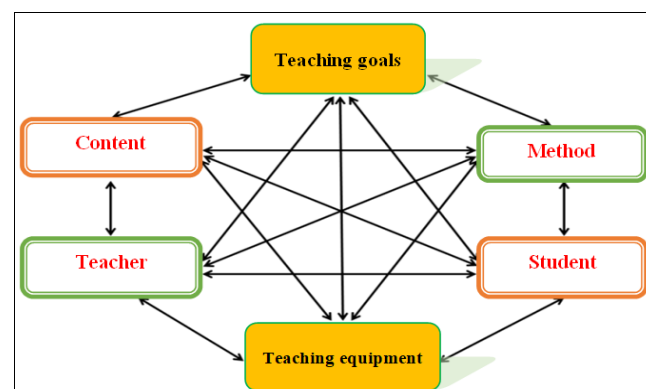
**Fig 2:** Pieces of management

Teaching equipment management is an indispensable part of school management activities. From the concept of management and teaching equipment, we can understand that teaching equipment management is the purposeful impact of management on the teaching equipment system to build, equip, preserve and organize the use. effective teaching equipment to improve the quality of teaching activities in schools. In other words, the management of teaching equipment is to make it have a close connection between teachers and students with the content and teaching methods of teaching and learning according to the orientation of the set educational goals. Currently, the management of teaching equipment has been digitized according to a system with the support of ICT.

## 2.3 The teaching equipment in Secondary school

### 2.3.1 The Location of teaching equipment

The most core factor in the teaching process taking place in the classroom apart from teachers and students is teaching objectives, lesson content, teaching methods and teaching equipment [10]. These factors have an impact, link, and support each other.



**Fig 3:** The relationship of teaching equipment with elements of the teaching process

### 2.3.2 The role of teaching equipment

Teaching equipment is a collection of physical objects that the teacher uses as a teaching medium to control students' cognitive activities, and for students, it is a source of knowledge, a means of teaching. Learning helps students understand the content of the lesson, form and develop their capacity

**Table 1:** The role of teaching equipment

The role of teaching equipment	Content
Teaching equipment is an indispensable part of teaching activities	<ul style="list-style-type: none"> <li>+ The material that represents the goals and methods of teaching and learning.</li> <li>+ The bridge that teachers and students will interact with to gain knowledge and achieve set goals.</li> <li>+ Plays a great role in the implementation of the principle "learning goes hand in hand with practice, education combines with productive labor, school is associated with society".</li> <li>+ Help teachers organize the learning process well, students under the guidance of the teacher can self-exploit the program's content.</li> </ul>
Teaching equipment is an indispensable part of teaching methods	<ul style="list-style-type: none"> <li>+ Having dynamism and clear pedagogical purposes, containing a rich content of knowledge, and at the same time acting as an object of perception.</li> <li>+ Acting as an "objective verifier" of theoretical issues, linking theory and practice.</li> <li>+ It is an experimental, visual teaching medium that is always associated with thinking and thinking is always associated with activities. will create the fullness of cognitive activity.</li> </ul>
Teaching equipment is an important factor to innovate teaching methods and improve the quality of education	<ul style="list-style-type: none"> <li>+ Play an important role in innovating teaching and learning methods.</li> <li>+ Having a close relationship, strongly influencing other elements: teachers (teachers, organizers, controllers) and students (students, self-directed subjects) to create optimal cooperation between forces participating in the teaching process with other elements of the teaching process.</li> <li>+ It is a teaching medium and an important condition for conducting an active teaching process.</li> <li>+ Reducing the traditional teaching style, increasing "student-centeredness", promoting positivity, initiative, creativity, self-discipline in learning and research activities, and in accessing knowledge, acquire knowledge and present acquired knowledge.</li> <li>+ Create impressions, symbols of knowledge for students; factor in ensuring the quality of teaching.</li> <li>+ Contributing to quality assurance of knowledge: accurate, scientific, general, systematic, transformative, applicable and sustainable</li> <li>+ Improve pedagogical efficiency</li> </ul>

## 2.4 Contents of teaching equipment management in Secondary school

According to [11, 12], the management of teaching

equipment in the lower secondary school includes the functions and tasks according to the following table:

**Table 2:** Contents of management of teaching equipment in Secondary schools according to management function

Contents of management of teaching equipment	Mission	Function			
		Planning	Organization	Directing	Inspection
	Purchasing	Develop a plan to purchase teaching equipment	Organize the procurement apparatus for teaching equipment	Directing the procurement of teaching equipment	Check and purchase teaching equipment
	Organization of use	Planning to organize the use of teaching equipment	Organize the use of teaching equipment	Directing the use of teaching equipment	Check and evaluate the use of teaching equipment
	Preserving	Planning to preserve, maintain and repair teaching equipment	Organizing the preservation, maintenance and repair of teaching equipment	Directing the preservation, maintenance and repair of teaching equipment	Inspect, maintain, maintain and repair teaching equipment

### 2.4.1 The task of managing teaching equipment in Secondary schools

(1) Managing the procurement of teaching equipment in Secondary schools

- The process of setting goals on the work of teaching equipment, system of activities and conditions to ensure the achievement of those objectives. The contents of the plan include:
  - Determine the investment needs in teaching equipment for each subject to ensure the achievement of the set teaching equipment goals in accordance with the actual conditions of the school.
  - Develop regulations and processes in the management and use of teaching equipment for the purposes of: improving the quality of education and training and reducing usage costs.
- Manage socialization resources to enhance middle school teaching equipment.

(2) Managing activities of organizing the use of teaching

equipment in Secondary schools

- The process of organizing, arranging, allocating work and authority to members and other resources in the school to be able to manage, use and preserve teaching equipment in the most effective way.
- Administer through the management decisions of the HT to carry out the responsibility of managing teaching equipment in the most convenient way, achieving the highest efficiency.

(3) Managing the maintenance of teaching equipment in the Secondary school

- Management duties on preservation, maintenance and repair of teaching equipment.

### 2.4.2 The function of managing teaching equipment in Secondary schools

(1) Planning, building, exploiting and using teaching aids and teaching equipment

- Making the overall school plan, each school year plan

on building building, exploiting and using teaching equipment:

- Basic investigation to determine the current state of teaching equipment, assess the level of use of equipment compared to the requirements of the school
- Study the list of equipment issued by the Ministry of Education, select the necessary equipment and teaching means suitable to the conditions of the school.
- Determine the necessary funding sources according to the school years and each cycle, and at the same time develop a plan to enhance equipment and improve the efficiency of using teaching equipment.
- Clearly define timelines for progress and completion.
- Plan to build and equip specialized classrooms, multi-purpose classrooms: music room, drawing room. Laboratory of physics, chemistry, biology, informatics...
- Plan to purchase new teaching equipment to replace or supplement damaged teaching equipment or to purchase new and additional teaching equipment that the school does not yet have.
- Plan for use funding from the state and from educational institutions.
- Plan for preservation, inventory, liquidation and addition of teaching equipment
- Plan for training and professional development for school equipment staff.

## (2) Organize the implementation of the plan

- Develop and implement regulations on the exploitation, use and maintenance of teaching equipment. This contributes to improving the effectiveness of teachers' exploitation and use of teaching equipment and students' responsibilities later. every lesson.
- Organize departments in charge of teaching equipment and assign responsibilities to departments and individuals in charge of implementing work.
- Send staff to participate in professional training courses on teaching equipment, in order to update and supplement new knowledge using newly equipped teaching equipment.
- Coordinating between the management board, staff in charge of teaching equipment, subject groups and subject teachers in directing with the professional management department and the department directly using.
- Organize the inspection and evaluation of the management, construction, procurement, exploitation, use, preservation, liquidation and supplementation of teaching equipment in accordance with regulations of

the Ministry of Education.

## (3) Directive of the principal in exploiting and using teaching equipment in Secondary school

- The principal must take responsibility in advance for the management and use of facilities, cells and assets not in accordance with regulations, causing waste at the unit.
- Inspect, repair, and regularly purchase teaching equipment to meet all activities for teaching.
- giving the right to manage and use teaching facilities and equipment to responsible individuals in working rooms and public property.
- Strengthening management to ensure effective use of teaching equipment as well as timely preservation, repair and addition to serve teaching work, avoiding loss and waste of school property.

## (4) Check and evaluate the work of teaching equipment

Regularly check and evaluate the quantity and quality of teaching equipment:

- Test content, teaching methods, conduct supervision tests
- inspect, liquidate, supplement, teaching means, teaching equipment.
- Motivating, rewarding, reminding and shaping teachers about the exploitation and use of teaching equipment in Secondary school

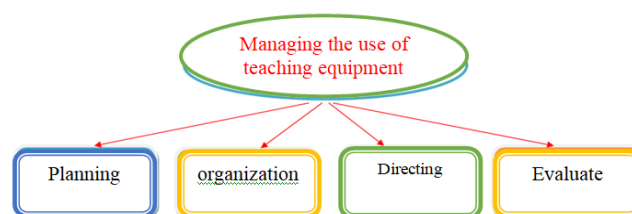
## 2.5 Strengthening the management of the use of teaching equipment in Secondary school in Vietnam

### 2.5.1 The goal of the measure

Raise awareness for administrators, teachers and students about the importance of using and managing the use of teaching equipment. thereby creating a motivation to improve the efficiency of the use and management of teaching equipment, contributing to improving the quality of teaching and learning.

### 2.5.2 Contents of the measure

In order to strengthen the management of organizational activities using teaching equipment in secondary schools, we rely on the management function with the following contents:



**Fig 4:** Renovating the management of teaching equipment procurement activities



### 2.5.3 Implementation measures

**Table 3:** Management of procurement of teaching equipment

Content	Perform
Planning to organize the use of teaching equipment	<ul style="list-style-type: none"> <li>- It is necessary to direct professional groups and each teacher to develop a plan to use teaching equipment fully and specifically. because in the current reality, if there is no plan to guide in a uniform and throughout the school year, teachers are very afraid to use the device due to many reasons that lead to the situation of teaching equipment. members still "teaching vegetarian", or only use it when there is a time, a lecture. If they want to use teaching equipment effectively, the expert group must make statistics and know the list and types of existing teaching equipment of the school in order to develop regulations on the mechanism for coordination in management, exploitation and use of the teaching equipment. between professional groups, disseminated, communicated to all teachers for planning use.</li> <li>- It is necessary to pay attention to the selection of teaching equipment, because not all teaching equipment can be used effectively. In order for teachers to have the skills to select and use teaching equipment, it is necessary to open refresher courses on techniques and skills in using teaching equipment in teaching subjects at media schools.</li> <li>- Directing and improving the activities of professional groups in schools, focusing on practical exercises, experiments and difficult lessons using teaching equipment. organize the development of topics on effective use of teaching equipment in many lessons, subjects and classes according to the curriculum.</li> <li>- Absolutely avoid having teaching equipment but not using it, or assigning a concentrated schedule to a time leading to many teachers signing up to borrow at the same time. the management of borrowing and returning teaching equipment must end during the teaching session to avoid long-term loss or damage.</li> </ul>
Organize the use of teaching equipment	<p>The school needs to clearly define the responsibilities of each department and each member of the teaching equipment management apparatus, specifically:</p> <ul style="list-style-type: none"> <li>- The principal is responsible for, through the vice-principals, planning for the construction, equipment, use and maintenance of the system of physical and technical facilities throughout the school, for organizing the implementation of the plan. plan and check the results. In addition, consulting with superiors, making plans to train and foster officials in charge of teaching equipment every year.</li> <li>- Vice principals are responsible to the principal for the management of facilities and teaching equipment in the school, directing specialized groups and functional departments to develop plans related to their work. manage teaching equipment, test and evaluate the above activities.</li> <li>- The professional team leader plans to exploit, use and preserve teaching equipment according to the content of the subject program. urge the monitoring and evaluation of the use of teaching equipment in the professional group.</li> <li>- Teachers are responsible for exploiting and effectively using teaching equipment that the school currently has and propose when there is a need to equip them. At the same time, make a plan to use teaching equipment for each lesson, coordinate with the officer in charge of teaching equipment to prepare, arrange and arrange teaching equipment for the lesson, after each use must sign Borrow and return according to the time and other regulations of the school or under the guidance of the official in charge of teaching equipment.</li> <li>- Each subject (physics, chemistry, biology) and equipment warehouse need to arrange an officer responsible for management. This staff member must have a certain understanding of the pedagogical space and be able to directly participate in the pedagogical process taking place in that space. Monitor the updating of teaching equipment, help teachers prepare teaching equipment, arrange, maintain, supplement and repair teaching equipment, synthesize reports on the use of teaching equipment in the classroom. week, month. complete system of records and books of administrative management of teaching equipment. develop rules for equipment rooms and subject classrooms, identify requirements for management, use, and responsibilities of officials in charge of borrowing, returning, inspecting, reporting, and user responsibilities. organize the preservation, preservation and arrangement of teaching equipment and means, and at the same time understand the regulations on teaching equipment in high schools of the Ministry of Education and Training.</li> </ul>
Directing the use of teaching equipment	<ul style="list-style-type: none"> <li>- Create conditions for teachers to receive regular training in cycles, to participate in professional and technical refresher courses using teaching aids.</li> <li>- Organize the movements of time attendance, class visits, lectures, competitions to make teaching aids according to the planned plan, conduct quality professional group activities. The content of activities of the professional group should pay attention to the assessment of the use situation, understanding the amount of teaching equipment currently available in the school, from which to plan to use or make more teaching aids, learn from the experience. Experience teaching lessons, pay attention to skills in using teaching equipment effectively. It is necessary to include the requirement to use teaching equipment into one of the basic contents to evaluate the teaching results of teachers. that makes every teacher in the school see that the use of teaching equipment is an urgent requirement in order to implement the renovation of curricula, text thiết bïook content, teaching methods to improve the quality of teachers. comprehensive education in the current period.</li> <li>- Organize for teachers to access modern teaching facilities such as proficient use of computers and multi-function projectors, electron microscopes, prepare lesson plans using information technology application software .. timely notification of newly added teaching devices so that teachers can approach and put them into teaching, promoting the effective use of teaching devices in schools.</li> <li>- In addition, it is necessary to organize seminars on topics related to the use of modern teaching aids and technical equipment in teaching in order to help teachers acquire theoretical and practical bases.</li> </ul>
Check and evaluate the use of teaching equipment	<ul style="list-style-type: none"> <li>- Check the teacher's process of exploiting and using teaching equipment to assess whether the use is effective or not, in accordance with the goals, plans, rules, and regulations set forth.</li> <li>- Test and evaluate teachers' teaching methods, skills and effectiveness in using teaching equipment through lessons, demonstrations, topic demonstrations, and dissemination of ideas and experiences on the use of teaching aids. teaching equipment and improving the quality of self-made teaching materials movement.</li> <li>- Outlining limitations and solutions to adjust and overcome, help teachers use and exploit teaching equipment more effectively. through that, creating a reverse information relationship in the process of managing teaching equipment.</li> </ul>

### 2.5.4 Conditions for taking measure

- It is necessary to create conditions and have clear mechanisms and policies for teachers in the school to participate in training to improve their qualifications and skills in using modern teaching equipment.
- It is necessary to regularly monitor and evaluate the effectiveness of teachers using modern teaching equipment in teaching activities.
- Arrange and arrange teaching equipment in the most convenient way for teachers to easily use.

### 3. Conclusion

When researching on homeroom teachers and team development, there have been many domestic and foreign works from these studies, we have drawn inherited content and necessary content research focus. Studying the team of classroom teachers as an important resource of primary schools, the article has analyzed deeply the influence of the fundamental and comprehensive reform of general education on the role and function of teachers. class leader; characteristics of pedagogical work of classroom teachers; Competency framework of classroom teachers and difficulties and challenges of classroom teachers in the current context.

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