

Problems and Countermeasures of State-owned Assets Management in Vocational Colleges in China from the Perspective of Equipment Inventory

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Abstract The rapid development of vocational colleges in China brings about the explosive growth of the number and category of state-owned assets that guarantees the development of vocational colleges. The special equipment and the general equipment included in the state-owned assets of vocational colleges are increasing at the fastest rate. Based on the problems from equipment inventory, this paper analyzes the problems of state-owned management, and puts forward countermeasures to improve the management of state-owned assets from formulating regulations and rules, strengthening the unified institution, applying the information technologies in building the team of administrators.

Key words Vocational colleges in China, State-owned assets management, Equipment inventory

0 Introduction

Vocational education was stressed as important as the general education when the *National Plan for the Implementation of Vocational Education Reform* was issued in January, 2019. As the dominant institute for training highly skilled talents for the country, vocational colleges in China have developed rapidly since then. While soft power of vocational colleges is improved, all kinds of hardware are upgrading at the same time to meet the need of teaching and scientific researches. The equipment, a vital part of state-owned fixed assets, such as all kinds of teaching instruments and mechanical equipment, medical equipment and transportation tools, music instruments and sports equipment, office furniture and devices, not just in categorical terms, but also in quantity, is increasing explosively as vital part of hardware.

Taking an example of Hangzhou Vocational and Technical College, whose financial appropriation is from Hangzhou municipal government Zhejiang Province, which means the assets of the college are state-owned assets. Taking 2018 before the introduction of the *National Plan for the Implementation of Vocational Education Reform* as a reference, the total value of equipment increased by 4.66 times in 2019; in 2020, due to the COVID-19 pandemic, the total value of equipment increased by 17.8%; 6.26 times in 2021; 9.12 times in 2022; and 9.86 times in 2023. The value of equipment of this vocational college is in the second place after that of real estate. The explosive growth of equipment has brought great challenge to the management of state-owned assets. How to manage the equipment effectively, optimizing the allocation of resources and providing better material guarantee for skilled talents cultivation and scientific research, has great significance. The key to it is to figure out the status quo of equipment comprehensively

and systematically and equipment inventory is the best way to realize it.

According to the *Interim Measures for the Administration of State-owned Assets of Public Institutions* issued by the Ministry of Finance of China in 2006, public institutions shall conduct regular inventory checks on physical assets to ensure that the financial account is consistent with its assets account, that the assets tags are consistent with the asset account, and that physical assets are consistent with the assets account. The equipment inventory in vocational colleges shall follow the requirements of the Ministry of Finance to check the financial account, the assets account and the physical assets. Comparing the financial account with the assets account to find out which equipment was not recorded by financial account; comparing the physical assets with the assets account to find out whether the information of physical assets is consistent with the assets account, such as the users of the physical assets, the places where the physical assets are stored, and the assets tags attached or not and so on.

The equipment inventory is usually initiated by equipment management department or state-owned assets management department of vocational colleges. It usually takes place throughout the whole college, choosing the equipment managed over a period of time or that of some teaching units depends on the plan of the vocational college. At the beginning of the inventory, adequate preparation is necessary to make the inventory achieve the expected goal. An inventory group including all the administrators of state-owned assets from each school and administrative department will be formed to carry out the inventory, sometimes an account company which is purchased by public bidding will be invited to join in the inventory. All the members of the inventory group will attend the training about the inventory, especially the requirements of inventory, the contents, the procedure and how to write a report of the inventory after completing the inventory of each school and administrative department. The rules of equipment inventory will be formulated and made known to all the staff. A liaison mechanism between the administrators of equipment manage-

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ment department and those of each school or administrative department will be established to solve the problems in the process of inventory in time.

1 Problems in the process of inventory

After the preparation work, the inventory starts. There are some phenomena in the process of inventory, including: (a) the assets tags are missing; (b) the information on the assets tags is not consistent with that of assets account or with that of equipment itself, such as the model or the specification of the equipment, the storing place or the administrator; (c) the equipment in the list of assets account cannot be found, it is lost, or stored broken somewhere; (d) some equipment in the list of assets account is found as machine replacement parts or maintenance projects actually; (e) the functioning equipment cannot be found in the list of assets account; (f) some surplus devices are kept unsealed in the storehouse, out of date; (g) some malfunctioning devices are kept in the storehouse, waiting for assets retirement; (h) these phenomena reflex some problems of state-owned assets management in Chinese vocational college.

1.1 The management of state-owned assets is overlooked In Chinese public institutions, whose financial appropriation are from the government, most vocational colleges belonging to them, there is a long-standing phenomenon that equipment procurement is valued, but the management of equipment is not. The management of equipment is not taken seriously, even neglected by the leaders, including the leaders from schools to colleges in vocational colleges. The long-term neglect has led to serious consequences. In most vocational colleges, there is no position for administrators of state-owned assets in each school and department. All the administrators are actually staff mainly responsible for other executive tasks. That is to say, they are undertaking the management of state-owned assets usually after they finish their duties. In reality, the task of management of state-owned assets is always shifted to new hand. Sometimes the ex-administrator is just getting familiar with the work before shifting the task of management of state-owned assets to the newcomer. The new administrator, on the one hand, needs a period of time to get familiar with the work, on the other hand, is not responsible for the work as the ex-administrator. In fact, students are usually asked to attach the assets tags. Therefore, it is not surprising that the assets tags are missing or not consistent with the physical assets or the assets account in (a) and (b). In daily management work, every teacher should play the most basic role besides the administrators because the teachers are the direct users or operators of the equipment in teaching activities or scientific researches. However, they are not proactive and cooperative in the management of state-owned asset, even not knowing what are on the list of state-owned assets administrated by themselves, therefore, the problem (c) is common in reality.

1.2 The regulations and rules of the management of state-owned assets are not comprehensive The management of state-owned assets involves the management of the life circle of the assets, from being recorded into assets account, distributed to the users or administrators, transferred or allocated to being main-

tained or disposed at last. The work of management of assets is connected with, even interacts with the work from departments of finance and procurement closely. Therefore, the management of state-owned assets needs detailed regulations and rules as well as regulatory and coordinated ones. Cui Changhua^[1] pointed out that "universities are formulating regulations and rules of the management of state-owned assets from a micro perspective, especially focusing on a type of assets with a large quantity, not from a macro perspective to formulate the regulatory and coordinated ones, focusing on their whole state-owned assets" as he analyzed the problems of the management of state-owned assets in colleges and universities in China. There is no exception in vocational colleges. Taking Hangzhou Vocational and Technical College as an example, it has formulated detailed rules for the management of a type of assets, such as office devices, teaching equipment, real estate, but has no detailed rules for the management steps, such as recording the goods into assets account, being maintained or scrapped of assets and fixed assets damage compensation, and macro management regulations and rules on supervision and coordination.

The lacking of the rules on recording the goods into assets account will make the administrators confused about what will be recorded as fixed assets and how to record the goods into assets. According to the regulations of the Ministry of Finance, the equipment donated from enterprises should be viewed as the state-owned assets. It is common for vocational colleges to receive assets donated almost yearly, but the assets donated are usually ignored because they do not need the payment by the department of finance. The denoted equipment will be put outside the scope of fixed assets management in the end. Some desks and chairs, paper shredders, printers and so on are not recorded as the fixed assets because of their low value. However, some parts or maintenance projects are recorded as the fixed assets, that is what we see in problems (d) and (e). In the process of recording the goods into assets account, especially the office furniture, desks and chairs are recorded by a set at one time, but by a piece at another time. The standards of recording the goods into assets account are not regulated by documents, changed with the administrators. The problem (f) is common in vocational colleges in China. "It is likely to be caused by the lack of consideration of the actual needs of daily work, the lack of awareness of economy. The budget fund is to be used up or to be withdrawn by the government at the end of the year. It is usually used as much as possible to buy surplus devices." said Huang Wei^[2]. From the level of formulation of regulations and rules, it is the lack of systems of sharing, allocating, managing and supervising state-owned assets of vocational colleges that leads to the unreasonable status quo that "don't take what you want, take what you can".

The problem (a) is another kind of waste of state-owned assets. It happens to valuable equipment as well as office devices. The equipment will be put aside, waiting for the time of retirement in the warehouse, not to mention the devices. It is because the lack of regulations and rules on maintenance of such state-owned assets that the malfunctioning valuable equipment and devices are

waiting to be disposed of in the warehouse, covered with dust.

1.3 Information technologies are not fully applied to the management of state-owned assets Professional management systems are widely applied in the assets management in Chinese universities and colleges, such as Googosoftware for fixed assets management and various systems developed by universities based on their specific situation. But the functions of the systems are not fully utilized, or the assets management system does not realize assets-other managements link. Only in this way, can the assets management work lead to better decision-making, reduced administrative overhead, and increased transparency within the vocational colleges.

According to Hu Ying's investigation on the assets inventory of universities, the inventory methods of universities are "tending to be similar in general", and "using the information system of state-owned assets" and "checking and verifying the assets based on the list of assets account" are the two main inventory methods^[3]. Vocational colleges have the same situation. In the process of equipment inventory in vocational colleges, in accordance with the principle "the one who uses the assets is responsible for the inventory", the users are checking the equipment according to the list of assets account in the information system of state-owned assets; while the administrators of each school are mainly responsible for communication and coordination besides checking the equipment used by themselves. The application of mobile devices such as handheld scanning and the assets management mobile APPs has stagnated generally. If problems are found in the process of inventory, individuals cannot timely use mobile terminals to log in to the asset management system to change the information such as the storage location and usage status of the equipment in time. They can only collect information and wait for the end of the inventory to operate on the computer terminal, which will lead to the failure of timely update of asset information and the minimal effect of the work of inventory. Therefore, it is difficult to eliminate the discrepancy between the actual situation of physical assets and the assets account on equipment users, storage locations and usage status in the asset management system.

2 Countermeasures to improve the management of state-owned assets of vocational colleges

2.1 Clarifying state-owned asset accounts The state-owned asset management department and the finance department of the vocational colleges should report the real state of the management of state-owned assets to the superior supervisory unit, asking for errors correction of assets account, deleting the account that recorded the maintenance projects or consumptive material into fixed assets, consolidating the accounts that recorded the parts and the whole. Only in this way, can we have an accurate and healthy account of state-owned assets that reflects the real possession status of state-owned assets of vocational colleges.

2.2 Accelerating the disposal of malfunctioning assets With regard to the malfunctioning equipment that has already reached the time of retirement, every school and department should report the fact to the state-owned assets management department and fol-

low the disposal process in time. The state-owned assets management department will collect such equipment and report to the higher-level supervisory institution. As for the malfunctioning equipment that has not reached the time of retirement, each school and department should report to the asset management department, which will carry out corrective maintenance to make it function normally and thus extend its service life—which is an effective way to strengthen the management of state-owned assets, according to Xie Zhihua^[4], a professor in Beijing Technology and Business University. In terms of the malfunctioning equipment that is left over because the campus merger in the process of development of vocational colleges, the state-owned assets management department of colleges should report the fact to higher-level supervisory institution to expedite the disposal of such equipment that is difficult to scrap due to historical reasons.

2.3 Managing the newly added state-owned assets in a scientific and efficient manner The rapid development of vocational colleges in China means the number of new state-owned assets is increasing steadily each year. The new assets added in recent years are accounting for a larger share of state-owned assets of vocational colleges. To manage the newly added assets scientifically and efficiently is crucial to the management work of the state-owned assets. Using the management system of state-owned assets, streamlining the management of the new assets, managing them according to the rules and regulations, improving the data accuracy and avoiding historical recurrence is what should be done currently in vocational colleges.

2.4 Establishing an internal unified management department and improving the assets management regulations of vocational colleges In vocational colleges, the assets management is generally administrated by different departments based on the classifications of the assets. For example, the real estate and transportation tools are administrated by logistic service center, while the equipment is administrated by equipment department. Management responsibility for each category is clearly allocated to specific departments or positions. This management approach ensures that the entire life cycle of fixed assets (from procurement, use, maintenance to disposal) is overseen by designated departments, preventing confusion and unclear responsibility in management. However, decentralized responsibility means each relative department is parallel in assets management, the duty such as allocation, coordination or supervision is not valid. There must be an internal unified management department that carries out the duty of allocation, coordination and supervision, such as the State-owned Assets Management Committee, all the members being the leaders from the different level of the vocational college, from the vice president of the college in charge of finance, state-owned assets, the leader of the department of state-owned assets management, the leader of the department of finance, to the leaders from each school. The committee not only emphasizes the centralized and coordinated management of state-owned assets, but also facilitates the collaboration between asset management and other administrative departments. The committee ensures full coordination and supervision from procurement to disposal of equipment, promoting

the integration of asset management and budget management to achieve optimal asset allocation, and improving the formulation of the standardized assets management regulations and rules.

According to the *National Medium-and-Long-Term Education Reform and Development Plan (2010 – 2020)*, it is necessary to strengthen the management of state-owned assets in schools of every level and improve regulations and rules for the allocation, usage, and disposal of school state-owned assets. Vocational colleges should review and improve existing asset management regulations, formulating a series of assets management regulations that are practical, instructive, and operable, tailored to the specific circumstances of vocational colleges. It is essential not only to refine macro-level regulations such as the *Management Measures for the Procurement of Instruments and Equipment* and the *Management Measures for the Disposal of State-owned Assets*, but also to improve micro-level rules like the *Rules on Goods Recorded as Fixed Assets*, *Rules on Fixed Asset Transfer*, and *Rules on Office Equipment Allocation*. The macro and micro regulations and rules will make each step in the process of asset management more precise, standardized, and procedural, ensuring that asset management is conducted by the established rules and regulations, not affected by human factors.

2.5 Applying the information technologies in the management of state-owned assets

Information technologies play an increasingly important role in modern management work by enhancing operational efficiency, fostering innovation, and enabling better decision-making. Information technologies are applied to assets management can not only streamline workflows, reduce errors, and respond more swiftly to various management tasks.

2.5.1 Applying "Internet plus State-owned Assets Management System" in the process of management work. Information technologies are applied to the management work in vocational colleges. Almost all departments have purchased corresponding management systems to meet their needs. However, there are barriers between these systems, and the state-owned assets management system has not achieved data sharing with other systems. It still relies on manual recording and checking of data, which can easily lead to errors. Applying the "Internet plus State-owned Assets Management System" in the process of management work means breaking the barriers among the management systems by establishing information transfer station. Therefore, each system can share the data and capture the needed data automatically to achieve dynamic management of the entire life cycle of state-owned assets more precisely. For example, the information transfer station links the procurement system with assets management system, allowing for the detailed data of goods purchased in the procurement system being sent to the assets management system as assets. The information from procurement projects will be selected as the basic asset account in the assets management system after project completion and acceptance, significantly improving the efficiency and accuracy of assets account. Connecting assets management system with financial management system enables the two departments to work smoothly from budget, reimbursement to settlement.

2.5.2 Promoting the construction of "mobile plus assets manage-

ment system". The assets management is a work that involves every individual in the unit. The application of information technology aims to make every one convenient to take part in the management. However, the assets management system is not so convenient. When the individual finds some problems in the daily management, he/she cannot change the information when the computer is at hand. It is normal to forget it in reality. Therefore, promoting the mobile application connecting with the assets management system based on the college's requirements is necessary. Every one can operate on the mobile APP to update the latest status of the assets under his/her name by mobile devices. The transfer information will be sent to the next-step related person immediately. With the mobile APP, the individual participation and efficiency of the management work will be increased.

2.5.3 Using RFID (Radio Frequency Identification) technology reasonably. RFID is a technology that uses radio waves to identify objects efficiently and automatically. The RFID technology is not fully applied in asset management in China because the RFID electric tags are expensive and not reusable. Actually, using the RFID electric tags to all the assets means a large amount of money. Using RFID electric tags on the valuable but portable equipment is acceptable and operable. Valuable but portable equipment is easy to be lost in the assets management. Attached RFID electric tags can help the equipment to be identified easily and efficiently.

2.5.4 Participating in the construction of large-scale and valuable scientific instruments sharing. The sharing of large-scale and valuable scientific instruments is strongly advocated by the state. Sharing such instruments across the province and city not only reduces the cost of purchasing similar equipment but also maximizes the utilization efficiency of large-scale and valuable scientific instruments. It is an effective way to manage the state-owned assets from the perspective of government. In reality, the sharing of large-scale and valuable scientific instruments is not satisfactory. The vocational colleges occupy some large-scale and valuable scientific instruments but do not participate in the sharing actively. Joining in the management platform for large-scale and valuable scientific instruments from the government, installing current sensors on such large-scale and valuable scientific instruments, the large-scale and valuable instruments can be used in a larger circumstance beyond the college campus. The current sensors monitor the entire operation and reflect whether they are to be repaired.

2.6 Strengthening the team building of the administrators of assets management and promoting the performance evaluation of the administrators

Although the unified institution is set up, the regulations and rules are formulated, and the information technologies are applied, the assets management work cannot be fulfilled without the administrators. It is of great significance to build a team of administrators of assets management. The administrators from each school and department are the fixed ones over a long period of time, not allowing for changing to the new employee all the time. The administrators are not only familiar with the regulations and rules, but good at computer. And the most important point is they are willing and active to take part in the manage-

