

Research on Innovation and Reform of Lean Management Concept Based on Logistics Management in Universities

Rui Guo

Dalian Maritime University, Liaoning, Dalian, 116000, China

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Abstract: This article focuses on the field of logistics management in universities, and introduces the concept of lean management after deeply analyzing the challenges faced by logistics management in universities at present. Its purpose is to explore effective ways to improve the level of logistics management in universities. By using the methods of literature research and theoretical analysis, this article explains the connotation of logistics management and lean management in universities in detail, and deeply explores the feasibility and value of introducing lean management into logistics management in universities. This article puts forward the innovative reform path of logistics management in universities based on lean concept, including: optimizing management process; Improve service quality; Strengthen personnel management, improve the professional level and work enthusiasm of employees; Improve information construction and build a comprehensive logistics management information platform. Integrating lean concept into university logistics management can effectively solve the existing problems, improve management efficiency and service quality, and promote the modernization of university logistics management, thus better serving the development of university education.

1. Introduction

As an important place for knowledge inheritance and innovation, the normal operation of universities can not be separated from efficient and high-quality logistics management. The logistics management in universities covers a wide range, covering the daily life of teachers and students, the material support for teaching and scientific research and many other aspects, which plays an indispensable supporting role in the stable development of higher education [1]. With the rapid development of today's society, the expanding scale of higher education and the increasingly diversified needs of teachers and students, the traditional logistics management model of universities has gradually exposed a series of problems, such as inefficiency, waste of resources, service quality to be improved, and it is difficult to meet the new needs of university development [2-3].

In this situation, the introduction of lean management concept provides new ideas and opportunities for the reform and development of logistics management in universities. The concept of lean management originated from manufacturing industry, with the core principles of eliminating waste, optimizing process and continuous improvement, aiming at obtaining maximum value output with minimum resource input [4]. Applying this concept to the field of logistics management in universities will help to solve the current difficulties faced by logistics management in universities and improve the efficiency and quality of logistics management [5]. This can also better meet the growing service needs of teachers and students in universities, enhance the support ability of logistics in universities, and then promote the progress of the overall education in universities.

It is of great practical significance to study the innovative reform of logistics management in universities based on the concept of lean management. This research can enrich and expand the theoretical system of university logistics management and inject new vitality and perspective into the research of university logistics management [6]. By exploring the specific application strategy of lean management concept in university logistics management, it is helpful to guide the university logistics management department to make scientific decisions and practice effectively, realize the

transformation and upgrading of management mode, and improve the overall level of university logistics service. This can create a better and more efficient learning and working environment for teachers and students in universities, and then promote the sustainable development of universities [7]. Therefore, the in-depth study on the innovative reform of logistics management in universities based on the concept of lean management has become an important topic to be solved urgently in the field of logistics management in universities.

2. Interpretation of logistics management and lean management concept in universities

Logistics management in universities refers to the activities of planning, organizing, coordinating and controlling all kinds of resources in order to ensure teaching, scientific research and teachers' and students' lives. Its scope is wide, including catering service management, providing safe and nutritious diet for teachers and students; Dormitory management to create a comfortable living environment; Campus facilities and equipment maintenance and management to ensure the normal operation of teaching and living facilities. At present, the logistics management in universities is facing the problem of cost control, inefficient resource utilization and uneven service quality, which is difficult to fully meet the needs of teachers and students.

Lean management concept comes from manufacturing industry, which is value-oriented and its core principle is to eliminate waste. The waste here covers overproduction, overstock, waiting time, unnecessary transportation and other forms. This concept emphasizes the optimization of business processes, and through careful combing and improvement of business processes, tedious and ineffective links are removed to improve the overall operational efficiency. This concept pays attention to continuous improvement, encourages all employees to actively participate, constantly finds problems and seeks solutions, so as to realize the long-term stable development of enterprises or organizations. Introducing this concept into the logistics management of universities is expected to solve the existing problems, improve the level of logistics management, and better serve the development of teachers and students and education in universities.

3. The feasibility and value of introducing lean concept into logistics management in universities

It is fully feasible to introduce lean concept into logistics management in universities. From the perspective of resources, university logistics has abundant human, material and financial resources. The human resources in universities are of high quality and can quickly understand and master the essence of lean management concept. Through training and guidance, lean methods can be applied to practical work. In terms of material resources, the facilities, equipment and venues managed by university logistics provide a solid foundation for process optimization and layout adjustment in lean management. Financially, universities have relatively stable capital investment, which is enough to support the preliminary research, personnel training and technical equipment updating needed to implement lean reform in the field of logistics management. From the perspective of organizational structure, the logistics management department of universities usually has a clear hierarchical structure and a clear division of responsibilities. This is in line with the responsibility required by lean management concept to be implemented in specific positions and personnel. By properly adjusting and optimizing the existing organizational structure, a management system based on lean concept can be smoothly established to ensure the effective implementation of various lean measures.

It is of great value to introduce lean concept into logistics management in universities. In terms of improving management efficiency, lean concept emphasizes eliminating waste and optimizing process, which can effectively reduce redundant links in logistics work, avoid duplication of work, and make human and material resources more rationally allocated. This can significantly improve work efficiency and make logistics management respond to the needs of teachers and students more efficiently and quickly. In terms of improving service quality, lean management is oriented to meet customer needs and regards university teachers and students as "customers" of service. By

accurately grasping the needs of teachers and students and continuously improving the service processes and methods, we can provide more personalized and high-quality services, enhance the satisfaction of teachers and students with logistics services, and enhance the sense of belonging and happiness of teachers and students in universities. From the perspective of resource utilization, the lean concept pays attention to the efficient utilization of resources. By accurately calculating resource demand, rationally planning resource allocation and reducing resource idleness and waste, the utilization rate of logistics resources in universities can be improved, the operating cost can be reduced, and the maximum value of resources can be realized.

4. Innovative reform path of logistics management in universities based on lean concept

(1) Optimize the management process

Logistics management in universities involves many complicated processes, and optimizing processes is the core of lean management. Taking the material procurement process as an example, the traditional procurement process may have problems such as complicated links and opaque information, which leads to low procurement efficiency and waste of resources. Based on the lean concept, the material procurement process is redesigned, and the procurement efficiency is improved and the cost is reduced by integrating requirements, centralizing procurement and simplifying examination and approval. See Table 1 for the optimization and comparison of logistics material procurement process in universities:

Table 1 Comparison Table for Optimization of Logistics Material Procurement Process in Universities

Process Stage	Traditional Procurement Process Description	Lean Procurement Process Description
Demand Collection	Each department submits demands separately, with inconsistent information, prone to omissions or repetitions	Establish a unified demand platform where departments submit demands online. The system automatically integrates and categorizes them, and provides intelligent reminders for review
Supplier Selection	Mainly rely on a few familiar suppliers, lacking extensive price comparison and evaluation	Build a supplier information database, regularly evaluate and update it, and select high-quality suppliers through public bidding, competitive negotiation, etc.
Procurement Approval	Multi-level approval with cumbersome procedures and long processing times	Simplify approval levels, set different approval authorities based on procurement amounts, and enable quick approval for small-value procurements
Contract Signing	Contracts are manually drafted, prone to omissions in terms and non-standard formats	Develop standard contract templates, clarify key terms, and digitize contract signing to improve efficiency and accuracy
Material Inspection	The inspection process is not standardized, and material quality issues may not be detected in a timely manner	Develop detailed inspection standards and involve professional third-party testing institutions in the inspection of important materials

(2) Improve service quality

The logistics service of universities directly faces teachers and students, and improving the service quality is an important goal of lean management. Taking catering service as an example, in order to meet the diverse dietary needs of teachers and students, we can carry out a survey on the dietary needs of teachers and students and optimize the food structure according to the survey results. The "Table 2" shows that teachers and students have a high demand for healthy and nutritious breakfast, rich and varied lunch and light and digestible dinner. Based on this, the logistics catering department can adjust the menu, increase the supply of coarse grains and fruits for breakfast, launch a variety of special dishes for lunch, and provide more porridge and vegetarian dishes for dinner. At the same time, the logistics catering department should strengthen the management of canteen environment, standardize the behavior of service personnel, and improve the service response speed, such as setting up feedback boxes and online evaluation platforms to deal with the feedback problems of teachers and students in time.

Table 2 Survey Results Table on Catering Service Demands of University Teachers and Students

Catering Period	Main Demands	Demand Proportion	Expected Improvement Direction	Corresponding Suggested Measures
Breakfast	Healthy and nutritious, requiring a combination of coarse grains and fruits	70%	Diversify coarse grains and fruits	Provide at least 3 types of coarse grains and 2 types of fruits daily
Lunch	A wide variety of dishes, including specialty dishes	85%	Increase specialty cuisine windows	Launch 2-3 new specialty dishes every week
Dinner	Light and easy to digest, mainly consisting of porridge and vegetable dishes	65%	Optimize vegetable cooking methods	Use low-oil and low-salt cooking methods
All Periods	Improve food hygiene and safety	90%	Strengthen hygiene supervision	Conduct daily kitchen hygiene inspections and make the results public
All Periods	Improve the dining environment	80%	Regular cleaning and facility maintenance	Conduct a comprehensive environmental cleaning and facility maintenance once a month

(3) Strengthen personnel management

As the concrete executors of logistics management in universities, their own quality and work enthusiasm will directly affect the management effectiveness. Therefore, relevant departments should strengthen the training of logistics personnel, and regularly offer training courses on lean management concepts and professional skills, so as to improve employees' business ability. It is also very important to establish a scientific and reasonable performance appraisal system. Managers can include work efficiency, service quality and satisfaction of teachers and students in the assessment indicators, so as to encourage employees to actively practice lean management concepts. In addition, this article believes that we can set up an excellent employee reward mechanism to give spiritual and material rewards to those employees who have outstanding performance, thus creating a positive working atmosphere.

(4) Improve information construction

In order to achieve lean logistics management with the help of information technology, it is necessary to build an integrated logistics management information platform, which integrates functional modules such as material management, equipment maintenance and service complaints. Through this platform, managers can know the data of logistics operation in real time, realize the dynamic allocation of resources and deal with problems quickly. Just like in equipment maintenance management, teachers and students can submit maintenance applications online through the platform, maintenance personnel can receive tasks in time and feedback the maintenance progress, and managers can also supervise and evaluate the whole maintenance situation.

The innovative reform of logistics management in universities based on lean concept starts from optimizing management process, improving service quality, strengthening personnel management and perfecting information construction. In this way, it can effectively improve the level of logistics management in universities, provide better and more efficient logistics services for teachers and students in universities, and thus promote the continuous development of higher education.

5. Conclusions

With the development of higher education, the logistics management of universities is facing challenges such as cost control and service quality improvement, and the traditional management model is difficult to meet the demand. The introduction of lean concept is just the right time. This article focuses on the innovative reform of logistics management in universities based on lean concept. It is found that it is feasible to introduce lean concept into logistics management in universities. From the perspective of resources, the human, material and financial resources possessed by university logistics provide a guarantee for the implementation of lean management;

In terms of organizational structure, clear hierarchy and division of labor also meet the requirements of lean management. Its value is multi-dimensional, in improving management efficiency, eliminating waste, optimizing processes and rationally allocating resources; In terms of improving service quality, we should provide personalized and high-quality services based on the needs of teachers and students; In terms of resource utilization, improve resource utilization and reduce operating costs. Based on this, the article puts forward a series of innovative reform paths. Optimize management process, effectively improve procurement efficiency and reduce costs; Improve the service quality by investigating the catering service needs of teachers and students to meet the diversified needs of teachers and students; Strengthen personnel management, improve the quality and enthusiasm of employees through training and motivation; Improve information construction, build a comprehensive logistics management information platform, and realize efficient management. Through the implementation of these innovative reform paths, the logistics management of universities can realize the transformation from the traditional mode to the modern and efficient mode, so as to better serve the teachers and students of universities and lay a solid foundation for the stable development of university education.

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