RESEARCH ARTICLE

EDUCATIONAL MATERIAL MANAGEMENT SYSTEM IN WOLAITA SODO UNIVERSITY, ETHIOPIA

*Dr. Demissie Dalelo Hankebo

School of Education and Behavioral Science, Wolaita Sodo University, Ethiopia

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ABSTRACT

Efficient and effective material management system in place is vital for realization of the university's core objectives, namely, teaching and learning, research and community engagement. The major purpose of the was to identify how well educational materials management activities, namely, procurement, purchasing, storage, inventories, distribution and utilization were facilitating the flow of educational materials in the Wolaita Sodo university and suggest feasible strategies to improve the system. Observation and interview were data collecting instruments employed in the study. The participants were 2 Quality Officers, 12 Quality Coordinators, 6 experts from (Internal Audit Office, Estate and Facility Management Directorate, and Procurement Directorate) and 15storekeepers from main stores andsub-stores of the university. Data was analysed by narrating the numerical descriptions items to depict the actual flow of educational materials in the university. The findings ofthe study revealed that educational materials and facilities like classrooms conditions, staff offices, laboratories and computer labs and stationaries were inadequate for the provision of quality education, research and community engagement services in the university. Further, the study concluded that educational materials management and utilization practices in Wolaita Sodo University was inefficient and ineffective that demands urgent interventions from all respective officials. Hence, it was suggested that the material management system should be carried out collaborative with all the respective stakeholders who have roles in the flow of materials in the university. More specifically, much attentions ahead should be given for activities like procurement, purchasing, distribution and storage system. Besides, the university must exhaust the existing potentials and continuously enforce the proper execution of decentralized clustered financial management system.

INTRODUCTION

Modern and secular higher education in Ethiopia was introduced in 1950 with the establishment of the then University College of Addis Ababa (Wondimu, 2003). Nowadays, Ethiopia has 45 public universities. Wolaita Sodo University (WSU) was established on March 24, 2007 by Ethiopian Ministry of Education as second generation. In the past decade, WSU has realized remarkable and multifarious progresses in terms of education delivery, program diversification, campus expansion and multi-disciplinary research activities. In Ethiopia from the total public expenditure more than 60 percent is used for procurement of goods and services (Tesfahun, 2011).The Ethiopian Federal Government Procurement and Property Administration Proclamation No.649/2009" defines "Procurement mean

obtaining goods, works, consultancy or other services through purchasing, hiring or obtaining by any other contractual means". Further, in this proclamation Article 5, Sub-articles1, 4 and 5 state that, public procurement and property administration shall have to comply with the following principles: (1) ensure value for money in the use of public fund for procurement; (4) accountability for decisions made and measures taken with regard to public procurement and property administration; and (5) careful handling and proper use of public property. Similarly, the Ethiopian Higher Education Proclamation No.650/2009, regarding autonomy of public higher education, Article 17, under sub-article 2 (e) states that the public higher education is accountable to "manage its funds and property on the basis of this Proclamation and other applicable laws and regulations" and sub-article (3) stipulates that " Every public institution shall exercise its autonomy in ways that, at the same time, ensure lawfulness, efficiency, and effectiveness, transparency, fairness and accountability". However, still in Ethiopia, specifically, in higher education context a lot of short comings on the procurement and

*Corresponding author: **Dr. Demissie Dalelo Hankebo,**
School of Education and Behavioral Science, Wolaita Sodo University, Ethiopia.

educational materials management practices were observed which include: absence of coordinated effort on the purchase requisition, identification and selection, shortage of experienced management and procurement staffs, lack of transparency in the procurement processes, absence of procedures for modern form of procurement activities and unclear institutional and organizational arrangement required in the management of the public procurement process.

MATERIAL AND MANAGEMENT

It includes planning, organising, communicating, directing and controlling of all those activities mainly concerned with the flow of materials into an organisation. Material management views material flows as a system. The concept of material management is based on the potential advantages to be obtained from controlling the flow of materials and goods from supplier through stores and production to dispatch. The overall control would thus embrace purchasing, stores, Inventory control, production planning, and physical distribution (Quayle, 2001). Material management is defined as the planning, acquiring, storing, moving and controlling of materials as per the requirement of the organisation. Other names given to this function include distribution planning and control and logistics managements(Benton, 2013).Logistic management is the planning and controlling of the flow of raw material in a cost-effective manner from the suppliers or point of origin to the manufacturing and then flow of finished goods for consumption in the customers' hands. Materials management is basically related with the smooth flow of materials in the organization for achieving its goals. For instance, a study conducted by (keitany, Daniel, Salome,2014) revealed that materials management is a tool to optimize performance in meeting customer service requirements at the same time adding to profitability by minimizing costs and making the best use of available resources. The major activities covered under materials management are the anticipation of the materials required in the organisation from time-to-time. It involves ordering and obtaining materials from the suppliers, introducing the materials to the organisation and monitoring the status of materials. It helps to optimize the usage of facilities, personnel and funds and to provide service to the user in the line with the organizational aims. According to (Benton, 2013) Materials management is the coordination and control of the various material activities. Hereunder the key material management activities are discussed.

Procurement Management: Procurement is about accessing goods and services from third parties to fulfil the strategic and operational objectives of the institution. Procurement is every activity associated with the acquisition and supply of goods, works and services from inception of an idea requiring and leading to a "buy" decision to the disposal of the goods or the conclusion of the service (Charles, 2007). It therefore involves the entire process of identifying requirements, drawing up specifications, assessing risks, managing tenders, awarding contracts, and managing and monitoring supplier performance. It includes planning for and deciding what to buy at the outset, after having conducted a thorough analysis of needs, and at the other end of the process, varying contracts as requirements change over time. According to the Ethiopian Public Procurement Proclamation (No 649/2009), procurement means "obtaining goods, works, consultancy or other services through purchasing, hiring or obtaining by any other contractual means."

From the above definitions, the overall tasks of procurement are to obtain goods, works, consultancy services and other services at the right quality, in the right quantity, from the right sources, at the right time, place and price to achieve organizational objectives.

Purchasing Management: Purchasing management is concerned with the planning and controlling of the acquisition of suppliers' goods and resources, to fulfill the administrative and strategic objectives of the organization. Purchasing describes the process of buying. It covers the knowledge of the requirements, identifying and selecting a supplier and negotiating price. Purchasing is an element of the wider function of procurement and it includes many activities such as ordering, expediting, receipt and payment. Purchasing is responsible for obtaining the materials, parts, supplies and services needed to produce of a product or provide a service (Joyce, 2006). Purchasing can be divided into two broad categories, large and small purchases, based on seven characteristics of purchased product – volume, specificity, technological complexity, essentiality, fragility, variability, and economic value (Parikh, 2005). All purchasing practices needs to abide with the major principles of purchasing (6R) which are Right quality, Right quantity, Right time, Right source, Right price and Right place. However, in WSU context, there exists less coordination among different parties while identifying materials to be bought, refining and applying the major principles of purchasing.

Facilities Management

Higher Education Facilities management defined as strategically integrated approach to operating, maintaining, improving and adapting the buildings and supporting services of an organisation in order to create an environment that strongly supports the primary objectives of that organization (Barret and Baldry 2003). Okorie and Uche (2004) indicated that physical assets and the facilities environment also portray the quality of the institutions. The physical assets and facilities development in higher education involves provision of buildings, classrooms, hostels, staff quarters, workshops, laboratories, ICT centers, libraries, health centers and sports facilities. Provision of stimulating learning environment and safety is also a major consideration in physical assets and facilities' development. Maintenance, renewal and innovation are other determinants of the quality of the physical asset and facilities development effort of the institutions that will attract the students, staff and foreigners to the institutions. Environmental beautification and sanitation give the aesthetic impression that guarantees the serenity and suitable climate for teaching, learning and research activities, healthy and secured lives in the school and its communities. Quality assurance of these facilities right from their planning, to development and utilization will ensure effective realization of set goals and objectives in higher education institutions.

Effective and Efficient Material Management: Efficient and effective material management practices demand properly harmonized, organized, coordinated and controlled material management system. Blunt's (1990) indicated that it is not the availability of material resources alone that guarantees effective performance in the organization, but their adequacy and effective utilization. At any level of education system, without adequate and efficient utilization of the available resources, the system may fail to achieve its desired results.

In this regard beyond from procurement and purchasing, the respective material management department must be fussy to continuously look after the physical distribution, storage, inventory and maintenance aspects of the material management system properly. In all the flow aspects of material management right form the purchase requisition, to buying action, storage and distribution of educational materials proper identification of the needs and procuring based on the specified need are very crucial. If this step missed it will lead to inefficiency and wastage by accumulating irrelevantly bought materials and results with poor customer satisfaction. Hence*, it is important to note at this junction that efficiency in resource management has a significant contribution in enhancing the quality and relevance of higher educational systems.* Quality assurance of material management as pillar as indicated on WSU quality assurance and enhancement document, right from their planning, to development and utilization will ensure effective realization of the university's set goals and objectives, quality teaching learning, quality in research and quality in the aspects of community engagement.

Research Objectives and Methodology

Research Objectives: This study has both general and specific objectives intended to achieve. Accordingly, the main objective of the study was to identify the status of educational materials management and utilization practices in Wolaita Sodo University and suggest feasible strategies to improve the materials management system. To realise this core objective of the study, the following research question was developed.

- How Efficiently and Effectively Wolaita Sodo University is managing and utilizing educational materials and facilities?

Research Methods

Observation and interview were the main data collecting instruments employed in the study. Accordingly, comprehensive audit checklist was developed in line with major classification of educational facilities and infrastructures available in the university. Four data collecting teams who were composed of different professional form the four directorates were engaged. The data collection was done by physical observation, discussion and assessment of educational facilities and infrastructure by using the checklist. Further, it was supported with photos to increase the reliability and trustworthiness of the data collected. The main sources of information are document on asset inventory, survey of physical facilities and learning resources and interviews with deans, department heads and academic staff.

Participants: All members of the observation teams were selected from Woliata Sodo University. Accordingly, 2Quality Officers, 12 College/school levels Quality Coordinators,2 experts from Internal Audit Office, 2 experts from Estate and Facility Management Directorate, and 2 experts from Procurement Directorate and 3 main stores and 12 sub-stores keepers. The observation team was further sub-divided in to four sub-teams keeping the professional compositions of the experts. Besides, colleges and schools in the university were clustered in to four clusters, namely, Health and Medicine Cluster, Social Science Cluster, Natural Science Cluster and Technology Cluster.

Scope of the Study: The study was conducted in Wolaita Sodo University three campuses, namely, Gandaba (Main), Otona Health and Medicine and Dawuro Tercha Campuses. Structural the study was conducted in line with decentralized financial management cluster system, covering all colleges, schools and departments. Horizontally, in this study, experts from four Directorates, namely, Institutional Quality Enhancement and Assurance, Internal Audit, Purchasing, and Facilities and General Property Management were directly participated. More specifically, the scope of the study focused classrooms status, academic staff offices, University's main stores and min-stores across all colleges and departments, laboratories and workshops and computer labs.

RESULTS AND DISCUSSION

The study aimed at identifying the status of educational materials management actually available in the Wolaita Sodo University and suggested strategies to improve the procurement, purchasing, storage, distribution and utilization system. If WSU has well established, efficient and effective procurement and facility management system in place right from planning, to development and utilization will ensure effective realization of the university core objectives namely, teaching learning, research and community engagement. This also improves integrations and the flow of work and minimized wastage of time and effort. Data was analyzed by narrating the numerical descriptions of items which depict the actual flow of educational materials in the university and make meaning from that for the categories of educational materials and facilities. Here under classrooms, academic staff's offices, laboratories, computer labs and stationaries audits were summarized across the colleges and schools. As indicated in table 1, classrooms facilities like Chairs (2376), switch (230), Socket (172), Table for LCD (69), Green/black board (56) and Whiteboard (66) were inadequate. Hence, these items demand urgent purchasing requisition. Besides, Chairs (1214), Florescent (452), Doors (33) and Windows (57) were broken, thus demands urgent maintenance. Furthermore, the walls of classrooms and some windows which are exposed for sunlight demands painting. It was observed that classrooms were not attractive for promoting the teaching learning process.

As indicated in the table 2 academic staff offices were observed by the team by using checklist. The analysis results indicated that Chairs (881), Tables (706), Desktops (745), Printers (276), Toners (973), Shelf (786), Internet access (384), Dividers (954) and Socket (388) were inadequate with the proportion of staff available in the offices. On the other hand, there are a lot of unused and irrelevant accumulations of toners (more than 800 pieces) at the main warehouse and in the min-stores of the college/school, as in the departments. This indicates that the purchasing practices of some materials, special, toners, demands clear specification in line with the existing printers and much of the procurement needs to be done at college levels. Still more than237 offices are needed for academic staff to perform their job safely being in offices.

Table 3 depicts the status of laboratories and computer labs available and further needed. Since the nature of the laboratories are different, they demand special attention for furnishing and installation of the existing laboratories. However, establishing the new laboratories demands collaboration and comprehensive work with expertise from respective colleges/schools.

Table 1. Classrooms observation

Clusters	Chairs		Florescent	Switch	Socket	Table for LCD	Door condition	Window condition	Black board	White board
	Gap	TBM	TBM	Gap	Gap	Gap	TBM	TBM	Gap	Gap
Natural Science	395	292	176	20	77	29	14	30	14	2
Social Science	1087	536	133	24	59	6	14	26	15	2
Technology	850	146	143	20	36	34	5	1	27	12
Otona	44	240	0	166	0	0	0	0	0	50
Total	2376	1214	452	230	172	69	33	57	56	66

TBM= To Be Maintained.

Table 2. Academic Staff Offices

Colleges/ Schools	Offices	Chairs	Tables	Desktops	Printers	Toner	Shelf	Internet access	Dividers	Sockets
	Gap	Gap	Gap	Gap	Gap	Gap	Gap	Gap	Gap	Gap
CNCS	47	82	95	70	28	190	97	81	119	71
CoA	16	109	73	98	36	318	39	68	112	61
SVM	0	7	7	9	4	40	12	1	17	0
CSSH	50	129	128	105	46	60	119	64	81	47
CBE	30	43	41	29	17	28	42	46	57	0
SEBS	5	10	30	42	16	76	30	29	35	27
CoE	36	192	188	171	43	92	47	42	365	5
SoI	11	69	69	171	43	40	21	11	93	11
CHSM	42	240	75	50	43	129	79	42	75	166
Total	237	881	706	745	276	973	486	384	954	388

Table 3. Laboratories/computer labs

Colleges/Schools	Laboratory Audit		
	Labs Needed	Labs Available	Gaps
Natural & Computational Science	40	25	15
College of Agriculture	22	3	17
School of Veterinary Medicine	7	4	3
College Social Science & Humanities	4	1	3
College of Business & Economics	6	1	5
School of Education & Behavioral Science	2	1	1
College of Engineering	19	7	12
School of Informatics	17	14	3
College of HSM	7	4	3

CNCS= College of Natural & Computational Sciences, CoA= College of Agriculture, SVM= School of Veterinary Medicine, CSSH= College of Social Sciences and Humanities', CBE= College of Business & Economics, SEBS= School of Education & Behavioral Sciences, CoE= College of Engineering, SoI= School of Informatics and CHSM= College of Health Sciences & Medicine.

Table 4. Stationary Observation1

Colleges/Schools	Gown	Black pens	Red pens	Blue pens	Chalks	White board Markers	Duplication Papers	Stapler	Duster
	Gap	Gap	Gap	Gap	Gap	Gap	Gap	Gap	Gap
CNCS	25	15	25	26	0	370	275	81	112
CoA	118	48	43	50	105	30	165	43	94
SVM	70	10	10	10	0	50	50	10	10
CSSH	122	55	55	55	24	140	155	76	100
CBE	0	12	6	16	0	41	0	47	25
SEBS	12	10	10	10	10	30	220	38	38
CoE	251	88	45	124	7	200	15	48	251
SoI	39	55	55	27	0	71	0	6	22
Total	637	293	249	318	146	932	880	349	652

Table 5. Stationary observation (additional)

Colleges/schools	Desktop		laptop		LCD		Printer		Copier	
	AV	Gap	AV	Gap	AV	GAP	AV	Gap	AV	Gap
CNCS	76	73	58	82	16	24	12	25	4	9
CoA	-	-	65	4	16	14	5	13	2	4
SVM	10	12	10	12	6	1	4	4	2	1
CSSH	57	61	15	29	11	26	10	43	2	6
CBE	60	29	65	25	22	0	14	0	8	0
SEBS	3	14	17	0	11	2	8	4	2	16
CoE	19	171	136	106	18	36	10	43	2	4
SoI	15	69	39	32	8	11	6	20	2	1
C HSM	7	50	-	-	-	-	7	43	-	-
Total	247	479	405	290	108	114	76	195	24	41

As indicated in table 4 routine stationaries which were frequently used by instructors for promoting the teaching learning process were also inadequate. The observation results indicated that gown (637), Black pens (293 packets), Red pens (249 packets), Blue pens (318 packets), Chalks (146 cartoons), White board Markers (932 packets), Duplication Papers (880 cartoons), Stapler (349) and Duster (652) were not adequately available in the main and min-stores of the university ahead of the beginning of the academic year. As listed in table 5,the most important educational technology facilities: Desktop (479), laptops (290 packets), LCD (114), Printer (195) and Copier (41), were not adequately available. The absence of these items adversely affects the teaching learning process. If teachers have no computers, they cannot access knowledge from different sources and update their teaching materials as well. Ultimately, inadequacy of these educational technology inhabits the implementation of blended learning and dictate teachers to use traditional teaching methods. Furthermore, actual observation of the University's main warehouses and sub-stores in the college/schools and departments indicated that there are some educational materials excessively stored somewhere and absent in other working units that calls for redistribution. Some of the University's main warehouses were leaking due to their roofs damaged which needs urgent maintenance. Educational materials in the sores of colleges, schools and departments were kept in disorganized ways and not shelved properly. Therefore, they need kaizen management and reordering.

Major Findings of the Study: The general objective of the study was to identify the status of educational resources (materials, facilities and infrastructure) in Wolaita Sodo University and suggest feasible strategies to improve the procurement, purchasing, storage, distribution and utilization of educational material resources in the university. Based on the analysis of data collected by checklists and interview, the following major findings were identified;

- Classrooms observation indicated that chairs (Desks) (2376), switch (230), Socket (172), Table for LCD (69), Green/black board (56) and White board (66) were inadequate for effectively promoting the teaching learning process. Further, the available basic educational materials like chairs (1214), florescent (452), doors (33) and windows (57) demands urgent maintenance. Furthermore, the study revealed that all classrooms walls and some windows which are exposed for sunlight (rays) demands painting and regular sanitation with due follow up of support staff by the respective authority.

- In the study it was identified that offices for the academic staff were inadequate. A number of staff academic staff (237) have no office to effectively undertake their regular duty. Besides, the study indicated that for the staff with offices have no adequate facilities like Chairs (881), Tables (706), Desktops (745), Printers (276), Toners (973), Shelf (786), and Internet access (384), Dividers (954) and Socket (388) so as to effectively undertake the teaching and learning processes and research activities.
- Regarding Laboratories and Computer Labs, the study shown that in engineering and other hard sciences the available laboratories equipment's were not installed for utilization.

On the other hand, the there is less cooperation among disciplines in sharing the available laboratories and they were inefficiently used.

- Concerning the availability and adequacy of the basic stationery the study depicted that items like Black pens (293 packets), Red pens (249 packets), Blue pens (318 packets), Chalks (146 cartoons), White board Markers (932 packets), Duplication Papers (880 cartoons), Stapler (349) and Duster (652) were not available across colleges and schools. On the other hand, some these stationaries were accumulated in the main warehouses of the university and needs urgent redistribution. Similarly, educational materials such as Gown(637), Desktop (479), laptops (290 packets), LCD (114), Printer (195) and Copier (41), also inadequate.

- Regarding toners, the study shown that there are a lot of unused and irrelevant accumulations of toners (more than 800 pieces) at the main warehouse and in the min-stores of the college/school, and departments. This indicates that the purchasing practices of some materials, special, toners, demands clear specification in line with the existing printers and much of the procurement needs to be done at college levels in line with the unique nature of the available printers.

- Results of observation and audit of the University's main warehouses and college/schools and departments warehouses indicated that a lot of educational materials were accumulated. Therefore, they must be urgently redistributed otherwise being damaged with rain since the roofs is badly linking.

Conclusions and Recommendation

Efficient and effective material management system in place is vital for realization of the university's core objectives, namely, teaching and learning, research and community engagement. Theoretical material management process demands effective planning, acquiring, storing, moving and controlling of materials as per the requirement of the organization. In higher education context, the material management system basically should focus on proper preparation of purchasing requisition, selection, procurement, storage, distribution, utilization and inventory system. However, the study revealed that educational materials and facilities like classrooms, staff offices, laboratories and computer labs and stationaries were inadequate for the provision of quality educational services for the learners. On the other hand, some educational materials (toner) and facilities (laboratories equipment's) were unnecessarily accumulated in the university's main warehouse and colleges/ schools' mine-stores being irrelevant to their demands. Therefore, from these, it can be concluded that educational materials management and utilization practices in Wolaita Sodo University was inefficient and ineffective that demands urgent interventions from all respective officials. Finally, the following ways out were suggested: (a)departments and colleges pay attention while identifying purchasing needs apart from copying redundant list of items; (b) all parties in the pipe line of material management like Purchasing Directorate, Colleges and Schools, Audit Directorates, General services and Property management Directorate, Academic Program Office and Institutional Quality Enhancement and Assurance Directorate should work collaboratively in material management and flow in the university; (c) the university needs to exhausts the existing potentials (for example G-Blocks) and finalizes the IOT

campus to get offices for those staff left in the main campus, and (d) conduct small and unique items purchase at colleges and schools level via decentralized cluster financial management system. And lastly, as a system promote continuous follow up and make installed the lab equipment's for use and improve the quality of educational services provided in the university.

Source of Funding: No funding source

Conflict of interest: None declared

Ethical clearance: The study was approved by the Department Graduate Council of Educational Planning and Management, School of Education and Behavioral Science, Wolaita Sodo University

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