The Skills and Knowledge Gap that Inhibit Effective Use of the Amlib Library Management Software at Egerton University Library, Njoro – Kenya

Philip K. Muchiri^{1,*}, Lucy Wathika¹, Jason Githeko²

¹Department of Literature, Language and Linguistics, Egerton University, Kenya ²Department of Computer Science, Egerton University, Kenya

Abstract Members of staffs are the main assets of an organization who propel its growth. Success in the use of Information Communication Technology (ICT) in an organization is dependent on staff capacity to effectively use the new technology. Organizations sometimes procure IT equipments, with little regard to staff capability to use them. Library staff are disadvantaged due to insufficient training that makes them unfamiliar with the new interfaces, and hence prone to make errors while using the software. This research revealed that lack of skills and knowledge on the use of the Amlib software contributes to human errors. Recommendations are provided that mitigates on the systems' user skills and knowledge deficiency.

Keywords Human errors, Library and Information Science, The Amlib software

1. Introduction

Automation in libraries has increased efficiency in processing, storage, retrieval, and high speed in services delivery as well as in the management and coordination of library functions. The amount of time spent in processing and delivering information resources to users in libraries is dramatically reduced and staff are relieved monotonous and repetitive work when they use library automated software. The use of Information Communication Technology (ICT) has seen great strides in reducing human errors that were rampant in the use of human manual systems. Norman (2012) acknowledges the impact of ICT in libraries by affirming that the purpose of automation is to save people from the dull, dreary routine tasks, reduce fatigue, allow productive use of time as well as reduce errors, besides increasing speed and efficiency in work and in information searching output. Kimaro (2017) concurs with Norman by stating that ICT is introduced in an organization to help manage resources, increase efficiency, increase work productivity and reduce workload.

Before the advent of ICTs and by extension the Integrated Library Systems (ILS), Rach (2008) says that many academic libraries were using in-house manual systems to process, store, retrieve and circulate library collection to library users. She attributes the practice to the high cost of investing in computers, software and the infrastructure that was not justifiable to serve the then existing small number of users served by an information centre and hence manual systems continued to be ideal systems in many information centres.

The manual systems caused many variations and inconsistencies in material processing by staff such that materials that were similar in content were dispersed in their shelf relative locations or not found at all because different staff could interpret the Cataloguing and Classification codes differently. The errors made it difficult for users to access and retrieve information resources they required at the time of need and a lot of time was wasted in searching for materials on the shelves and hence information seekers were compelled by the then circumstances to physically master shelve locations of different resources rather than search using the retrieval tools available. This practise by users disoriented them especially when resources were moved to other locations as part of library house-keeping practices. Sindhav and Patel, (2014) observed that the manual systems lend to duplication of work and a lot of manpower to complete a task that would otherwise be handled by a single computer at great speed and accuracy. These were the practices at Egerton University library before it was automated. In order to overcome these challenges, the Egerton University library acquired an Integrated Library System known as the AMLIB that could standardize the processing, cataloguing, and circulation of library

Copyright © 2019 The Author(s). Published by Scientific & Academic Publishing This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/

^{*} Corresponding author:
philipmuchiri13@gmail.com (Philip K. Muchiri)
Published online at http://journal.sapub.org/library
Copyright © 2019 The Author(s). Published by Scientific & Academic Publishing

information resources so that entries of records could be done accurately and consistently.

The Amlib software in EU library has on average addressed the problems of wrong entries of information resources, duplication of records, wrong surcharges on overdue books, missing records, reduced staff workload, but has not fully tackled the inconsistencies, inaccuracy and occurrences of errors that is allegedly caused by staff inefficiency.

Though the Amlib software as discussed by Nyamboga [et.al], (2012) has remarkably impacted positively to most operations of the library, it is not clear why human errors continue to occur even where staff are expected to demonstrate expertise in carrying out system operations.

2. Statement of the Problem

The Amlib integrated library software at Egerton University library has been in use since 2008. It was expected to eradicate the many challenges staff faced with the manual system especially in creating and filing records, notwithstanding the searching and accessibility for information materials. There were many erroneous and inaccurate claims made against library users that created disharmony and conflicts between the library staff and the library users. Prior to the new system, few staff worked with computers for limited amount of work and time, contrary to the expectation of the new automated system today. The library staff and library users were poorly exposed to usage of computers such that when the Amlib software became in use, they encountered new challenges because of its unfamiliar interfaces and other functions-related challenges. Staff therefore, lacked the capacity to efficiently and effectively navigate the software, as witnessed by the many human errors that characterised the system to create, store and retrieve inaccurate data. It is in this background that this paper intends to address how the human skills and knowledge deficiencies can be eradicated to prevent or minimize the human errors from occurring so that staff can become efficient and effective in using the Amlib software.

3. Literature Review

Various types of errors are caused by human beings in the course of executing operations. Most systems are designed in full view of possible errors that would emanate from humans as they interact with the software systems. Some systems are designed in a way that human errors are correctable, revocable, recoverable and avoidable. Norman (2013) identified some reasons that drive people to causing errors such as the nature of task and procedures that compel a person to stay alert for long hours besides multi-tasking where one is subjected to interfering activities.

Reason, (2012) viewed human errors in two ways: the person approach and the system approach. The person

approach focuses on the errors and procedural violation of processes such as forgetfulness, inattention, poor motivation, carelessness, negligence and recklessness. These are moral issues with the assumption that bad things happen to bad people which psychologists call "the just world hypothesis". Reason suggests that they could be countered by "instilling people's sense of fear, rewriting procedures or adding to existing one, taking disciplinary action, threat to litigation, retraining, naming, blaming and shaming. In the System approach, Reason sees these errors as consequences rather than causes that include recurrent error traps in the workplace and organizational processes that give rise to them. To counter the errors, Reason gives the supposition that it's difficult to change human conditions but easy to change the conditions under which human work by having system defences in place such as warnings in the form of text, light or sound such that when an error occurs, the obvious action is to find out why the defences failed to give alert to the software user. Desai, (2010), asserts that "human errors are caused by humans rather than machines". According to him, causes such as lack of concentration, carelessness, and fatigue, are bound to occur due to attention and memory failures while dishonesty, and fraud, are seen to be caused by mistakes that are intended to violate and sabotage the software.

There are circumstances under which human make errors while working with computer software in a library such as;

- Doing the wrong thing in a situation, e.g. forcefully shutting down the system while the software is running or renew loan item instead of clearing.
- Planning to do right thing with wrong outcome. For instance, save file instead of updating, wrong spelling of terms or give wrong coding to a stock item.
- iii. Failing to do anything when action is required, for example failing to save or update entry of a record but instead log out the system.

Mutula, (2010) observes that lack of proper training of librarians in using ILS contributes to occurrences of errors. In rare cases some systems have complicated procedures that are hard to follow, have poor Graphic User Interfaces (GUI) whose physical appearances do not make sense as expected. Sabotage, network failures and power surges are other hypothetical factors that causes errors in the software.

Ultimately, ILSs are used to support internal and external operations of organizations as well as to enhance online interactions with organizations' stakeholders. In libraries, it is used to keep administrative information of patrons and the collection in both print and electronic media. The importance of information management system is that it has successfully freed people from managing data manually, and that its usage is inevitable in todays' information age, that is characterized by high speed information flow and exchange.

The security of the data is of paramount concern to the information managers that should be prioritized during the design and development of software. It is essential for the designer and developer to understand the people to whom the

system is intended and put much consideration on their requirements as the top overriding factor.

Regarding the security of data, Anderson, (2008) is of the view that large databases will never be free of abuses by breaches of security. He states that if a large system is designed for ease of access, it becomes insecure; if made watertight it becomes impossible to use. Ward, (2008) argues that users of the system are themselves the biggest risks to the databases while they remain the biggest assets of an organization that propel its growth. To minimize security risks, it is thus important to control users' privileges and rights to the access of the system database. The Access right is an individual license authorizing one to use a system to certain level and this authority can be revoked, denied, extended or limited depending on user needs and institution policy.

Gerhart, (2015) while contributing on the need for privileges control says that "when workers are granted default privileges that exceed the requirements of their job functions, these privileges can be abused". He laments that some companies fail to update access privileges for employees who change roles within an organization or resign from service. This kind of negligence by the supervisors is risky to the systems because such former users would likely comeback to sabotage the system in revenge against some objectionable transfers or dismissal from service. Maurer (2015) concurs with Gerhart that the system abuse occurs due to supervisors' lack of expertise required to implement security controls, enforce policies or conduct incident response processes.

System violation is one of the most common causes of data loss that infringes on the rules and procedures such that the resulting data is distorted and may give wrong status of business. Reason, (2012) observes system violation as procedural violation of processes caused by moral issues such as inattention, carelessness, negligence and recklessness that could be countered by instilling people's sense of discipline. People working with Amlib software require supervision to ensure procedures and processes are strictly followed in order to promote their skills and knowledge capacity to understand and appreciate the system.

4. Methodology

Descriptive research survey was adopted for this study. It involved using questionnaires to collect data from a representative sample chosen from the target population. Descriptive statistics were used to summarize the results. This research design gave the researcher an opportune time to interact with the participants and understand the current status of the Amlib software by way of discussion and interrogating the system.

4.1. Population of the Study

The target populations consisted of library staff at Egerton

University library who are users of the Amlib. The target population was approximately 78 (Seventy-Eight Staff) that was stratified into the following groups; Technical Services Division and the Reader Services Division.

Table 4.1. Target Population Sampled for the Study

Strata	Population
Technical Service Division	34
Reader Services Division	44
Total	78

Source of data: The Library Staff database 2018.

4.2. Sampling Procedures and Sample Size

Sampling was used to select 50 library participants out of 78 staff who form the sample population. Participants were selected from list of staff appearing in the Night shift and weekend work schedules which provided approximately 48 library staff per week and additional 2 supervisory staff who are section heads in Technical Services and Reader Services divisions of the EU library. It was purposive sample of participants with similar characteristics engaged in working with the Amlib software in the processing and circulation services in the Egerton University library.

Table 4.2. Sample Population

Strata	Population		
Technical Service Division	20		
Reader Services Division	30		
Total	50		

Source: Field Data 2019

4.3. Data Collection Instruments

The researcher used questionnaires and interview schedules to collect data from the library staff. Questionnaires were administered to 48 library staff while the Interviews were conducted to the two (2) supervisors who are in charge of the two main divisions i.e. the Technical Service Division and the Readers Service Division. The questionnaires were dropped and picked from individual staff while interview sessions were held in relaxed environment inside the respective office in the two divisions. The questionnaire had structured closed, open ended and Likert scale type of questions which allowed respondents freedom of response, while the interview questions were predetermined and allowed the interviewee to give additional information they felt relevant to the area of discussion.

4.4. Data Presentation and Analysis

Descriptive statistics were used to summarize quantitative data. Most of the data obtained was nominal. A computer-based program the Statistical Package for Social Sciences (SPSS) version 22 was used to analyse quantitative data which is presented in tables and graphs.

5. Results and Discussions

5.1. Results

The study was conducted in Egerton University library Njoro, Kenya where all the cadre of library staff were the participants because of their engagement with the Amlib software in their official duties, which is the foundation of this study. They included the Clerical staff, Mid-Level Staff, Administrative staff and the Senior Library Staff. Egerton University library was selected for the study because it uses the software and the need to address the human errors witnessed that affects its services to intended clientele.

Adequate skills and knowledge resulting from intensive training on software operation is a prerequisite qualification for anyone to successfully work with software. Lack of adequate training only exposes one to "trial and error" operations that may lead one to cause critical errors that could be difficult to identify and correct. This chapter presents study results, discussions and summary of the findings, conclusion and the recommendations while focusing on the users skills and knowledge in the use of the Amlib integrated library management software.

5.2. The Reasons for Occurrence of Human Errors in the Use of the Amlib Software

From the findings in Table 5.1 below, majority (38.1%) of the respondents agreed that staff fatigue contributed to occurrences of human errors while only 11.9% of the respondents disagreed. Majority of the respondents on the other hand, strongly agreed that negligence contributed to occurrence of human errors and a minority (13.6%) of the respondents neither agreed nor disagreed on the statement. A larger portion of the respondents disagreed that long procedures contributed to the occurrence of human errors according to the results in Table 5.1 below. This is represented by a larger percentage (27.7%) both disagreeing and strongly disagreeing with the statement that long procedures contributed to the occurrence of human error. Lack of proper training on the other hand, contributed to the occurrence of human errors with a majority of the respondents (29.8%) agreeing followed by those who strongly agreed (23.4%). System failure was also another cause of human errors in the library according to the findings in Table 5.1 with a majority (31.9%) of the respondents

strongly agreeing then those who agreed (21.3%). It is not easy to relate staff forgetfulness to the occurrence of the human errors according to the findings in Table 5.1 since majorities (27.7%) of the respondents were indifferent.

An equal proportion (23.4%) of the respondents both agreed and strongly disagreed with the lack of proper supervision contributing to the occurrence of human errors in the library and only 14.9% strongly agreeing to the statement as indicated in Table 5.1. However, equal proportions 19.1% were indifferent with those who disagreed to statement. The results paint a picture that is interpreted to imply that in some sections of the library, supervision is closely done while it lacks in some other sections. Alternatively, it could be argued that supervision is done to some cadre of staff and not to others.

Responding to statement on the Amlib software interfaces, it was noted that an equal proportion of the respondents (27.7%) both agreed and strongly disagreed that poor user-Amlib interface contributed to occurrence of human errors in the library with only 8.5% being neutral according to the findings in Table 5.1. The assumption drawn from the above responses about the interface is that library staff are familiar working with the modules they deal with on daily basis in their respective sections of the library but are not conversant with the modules in applied in other sections of the library they hardly work in and therefore the interfaces become difficult to operate during their initial transfers and this could contribute to many errors occurring before getting acquainted.

Lastly, intimidation by long borrowers queue sparingly contributed to occurrence of human errors according to the results in Table 5.1. The majority (40.3%) of the respondents strongly disagreed to the statement followed by those who disagreed (29.8%) while 10.6% agreeing and strongly agreeing respectively and only 8.5% of the respondents being indifferent. The possible explanation to the results on the statement is that long queues of borrowers are experienced at the circulation sections of the library at certain specific period of times. The library comprise of other sections and offices that uses the Amlib software in processing of information and resources but do not necessarily have users waiting in the queue to be served and hence a big percentage of the respondents negate the statement.

Table 5.1. Causes of Human Errors in the Use of the Amilb Software							
	SA(%)	A(%)	I(%)	D(%)	SD(%)		
Staff fatigue contributes to occurrence of human errors	19.0	38.1	11.9	11.9	19.0		
Negligence contributes to occurrence of human errors	25.0	22.7	13.6	20.5	18.2		
Long procedures contributes to occurrence of human errors	17.0	17.0	10.6	27.7	27.7		
Lack of proper training contributes to occurrence of human errors	23.4	29.8	10.6	21.3	14.9		
System failure contributes to occurrence of human errors	31.9	21.3	12.8	17.0	17.0		
Staff forgetfulness contributes to occurrence of human errors	12.8	23.4	27.7	19.1	17.0		
Lack of proper supervision contributes to occurrence of human errors	14.9	23.4	19.1	19.1	23.4		
Poor user/Amlib interface contributes to occurrence of human errors	17.0	27.7	8.5	19.1	27.7		
Intimidation by long borrowers queue contributes to occurrence of human errors	10.6	10.6	8.5	29.8	40.4		

Table 5.1. Causes of Human Errors in the Use of the Amlib Software

In summary, the major sources of human errors, in order of merit, are therefore; lack of proper training and skills, staff fatigue, staff negligence, and long system procedures. However, lack of adequate supervision, poor user-system interface, staff forgetfulness, system failures and long queues, cannot be ruled out as participatory sources of human errors in Amlib system according to the data collected from the field.

5.3. Period of Service against Frequency of Making Errors

It is assumed that the more a person is exposed to working with an ILS system, the more the experience is gained and therefore achieves the expected outcome. Managers in some organizations have the notion that long serving and experienced workers are skilful and are effective in their performances and are therefore trustworthy to work with minimal supervision even while performing new roles. This could be dangerous assumption that they are able to interact with the system well. However, the findings provide data which shows that long experienced workers are less vulnerable to creating human errors than it is with the inexperienced new staffs. An investigation carried out on the period of service in the library by specific staff against the frequency of making errors while processing and circulating information resources revealed that the longer a person interacted with the system, the lesser the number of errors one made. The finding confirms that majority of human errors are caused mainly by new inexperienced library staffs, that is dependent on the time of hire and the period one has served in a section. Though the case, the findings does not exonerate long serving staffs from making patchy human errors. This therefore calls for intensive supervision of system users across the staff cadre to mitigate any level of error occurrences.

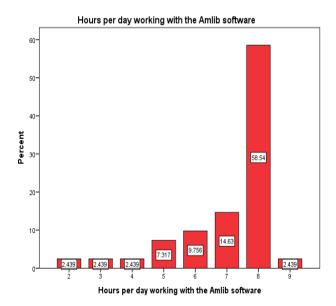


Figure 1. Response of participants on daily hours working with Amlib system

From Figure 1 above, it is clear that many of the library staff day to day work is embedded in the use of the Amlib software in the Technical services division and in the Reader services division. The low usage of the Amlib software by between 2 to 4 hours is primarily by the senior administrative staffs that are occupied with other different administrative duties that are not necessarily related to the software functions. The majority staffs are engaged for more than 6 to 8 hours in routine library works and therefore are more exposed to the system, implying that they have gained skills and proficiency in their areas of operations. However, if we are to believe in this assumption that exposure produces competence, then the senior administrative staff would fail the test of proficiency in the use of the Amlib software and would be alleged to be the main contributors of human errors in the system.

5.4. Skills against Frequency of Errors

Perceptibly, system users must at least have attained some level of trainings in order to have adequate skills to operate ILS. From the data collected, the researcher found a relationship between adequacies of skill to work with Amlib and the frequency of making errors while processing information materials in that experienced staff made errors just as is the case with new staff. According to the results in Table 5.4, it shows that the respondents who had worked in the library for one year rarely made errors as was the case with the respondents who had worked for two years with only 1 confirming had often made errors while processing information materials.

On the other hand, for the respondents who had worked for three years and above, 6 indicated that they had never made errors and a majority (21) had sometimes made errors followed by 15 who rarely made errors and at least 1 had often made errors while processing information materials. Therefore, the results in Table 5.4 imply that most of the errors made while processing the information documents in the library were attributed to the staff who had worked for three years and over. This therefore implies the errors in the Amlib software are significantly increasing in sharp contrast with the period of service the library staff have interacted with the Amlib software. The errors are witnessed in the OPAC and in the library circulation services databases.

Time worked in library * Make errors while processing information materials Cross tabulation Make errors while processing information materials Total Never Sometimes Rarely Often 0 1 year 0 0 2 2 Time 2 years 0 0 2 1 3 worked in the 3 years 1 library 6 2.1 15 43 and above

21

6

19

2

48

 Table 5.4.
 Period of Service against Errors

Total

Source: Field data (2018)

5.5. Summary of the Findings

The major findings are based on study objective and data analysis.

5.5.1. Types of Human Errors

In this study, human error is simply the inappropriate human action taken when executing a task while using the Amlib software. The study revealed three types of human errors that occur while using the Amlib software that are; the errors of omission, errors of commission and error of record redundancy. The error of omission is where vital data of a user or an information resource is omitted from the database such that it affects future access and retrieval of record in future and also becomes almost impossible or difficult to differentiate between two or more similar items or subjects. This error is said to be caused by memory lapse of an individual which Norman (2013), explains it occurs when one forgets to take action when required or unintentional omission of critical data. The findings reported error of omission as error that creates delay in library services delivery such that verifications of items against their descriptions take much time before action can be taken such as retrieval or issuing the item to the waiting borrower. This type of error causes the library to aver inaccurate claims of library resources from library borrowers, embarrassment and disappointment to its clientele.

The errors of commission were also found to be contributing factor to conflicts between library users and staff where records are either wrongly entered, wrongly updated or no action is taken when required. Reason (2012), says that this type of error is as a result of "incorrect action taken" such as creating wrong records instead of updating the existing, skipping a step in storage procedure, thereby violating the procedures, or one misses key command in processing information or even retrieving the wrong file and taking wrong action on it. The error is attributed to the incorrect description of library records and files, inaccurate penalties as overdue fines to library borrowers for materials they never borrowed and wrong impression of the library stock.

Error of record redundancy gives misleading account of the stock in the OPAC by duplicating an item severally. The error not only inconveniences OPAC users by wasting their valuable time in perusing through void records but also occupies unnecessary space in the database. Library users' efforts and time is of great value and need to be secured from mass of useless data, such that it is spared to search for relevant sources that satisfy their information needs.

5.5.2. Sources of Human Errors

There are many reasons that make humans to make errors. The findings in this study concurs with Norman (2013), in his contribution on the perceived sources of errors, that nature of task and procedures that compel a person to stay alert for long hours and multi-tasking where one is subjected to interfering activities are the main sources of human errors.

However there are other underlying issues revealed by this study that make users of software make errors such as training, time pressure, fatigue, long system procedures and the environmental factors associated with the work place.

5.5.3. Staff Training

The investigations carried out revealed that not all staff have adequate skills and knowledge to handle most of the Amlib software modules. This deficiency is attributed to the inadequate trainings offered to staff at the time of getting engaged to work with the Amlib software. It was established that most staff depends on each other to learn and share day to day experiences within their working areas. The findings disclose that short sessions of training of staff is done in-house by the Amlib vendor and is restricted in training in the software modules that have been paid for by the library. This arrangement of training is not sufficient at all that can guarantee the competence of trainees in the use of the Amlib software.

Further, the study revealed another reason behind the staff skill gap as that caused by the restrictions and control of rights and privileges to compel staff to operate modules that are only related to their respective sections. The study found out that the restriction is meant to ensure the security of data and that staff take responsibility of the actions they take in their respective sections. The justification on the restriction is given by Ward (2008) by asserting that users of a system are themselves the biggest risk if no controls are in place. This claim is supported by Gerhart (2015), while contributing on the need for privileges control says that "when workers are granted default privileges that exceed the requirements of their job functions, these privileges can be abused". Whatever the argument, the restrictions deny staff the opportunity to understand the interrelationship of the many modules in the Amlib software. The restriction has also made library staff to focus on the specific sections' objectives rather than the overall objective of the library to the extent that nobody cares to correct the errors found emanating from different section.

Another finding of interest in this study reveals that most staff in the library have diploma and degree certificate in the field of information science and that they have been over trusted by their superior staff in their daily undertakings and therefore, there is minimal supervision on their performances in both Technical and Reader services divisions. This is an omission that needs to be addressed because the current system errors has proofed that not all academically qualified people are able to work efficiently and effectively with the software and particularly the Amlib software.

5.5.4. Training of System End-User

Training of system end-user on specific technology requires formal instructions that aim at satisfying their work requirements while creating strong bond between the participant and the software which helps the software acceptance by the end-user. When end-users of systems are involved in training, they feel that they have the confidence in working with the software and this ensures maximum efficiency right from the beginning. In ideal situations, training on the use of specific IT should be offered first before the implementation of the new IT system so that the expected end-user of the system will have an opportunity to accustom themselves with its processes and procedures before it is implemented. Simard (et al), (2018) while emphasizing on the need for early training, says that investing in training allows businesses to see the benefit that come with the implementation of a new system. They add that implementing new IT in organizations is remarkable change for many employees and therefore the training helps in dealing with any resistance coming from employees who are hesitant to such change.

While focusing on the need for training end-user in Human Resource Management (HRM) project, Stricker (2000) concurs with Simard by saying that training should be rolled out prior to parallel testing of the system such that it will help them when the system goes live. He urges that training is one of the most important steps undertaken for successful system implementation.

Practically, most training are delivered on site where the clients are found or delivered in private locations depending on the suitability of the prevailing circumstances. Other trainings are supported through classroom environment or through computer-based training where end-users are exposed to hand-on such that they have an opportunity to be engaged with the system. This type of training gives the participants an opportune time to learn how the different models are used so that they are able to capture the views of the system at different levels of details.

Generally, the training of the end-users of software is as important just as it is to implement new IT system in any organization. However the training of library staff in Amlib software at EU library is doubtful that it is thorough to address the scope of the system, navigation methods, data fields available and the generation of basic reports as evidenced by the basic errors found in the Amlib system. It is desirable at the end of every training session that evaluation on the impact of the training to the trainee be undertaken so that to ascertain that the training yields positive results towards the use of the software.

6. Conclusions

In this era of Information Communication Technology(ICT), vibrant organizations require fully trained, skilled and knowledgeable workforce that steer its growth through use of the Information Technology(IT). Before any IT is inaugurated after installation, it is recommended that the expected users of the IT should undertake intensive training so that they are equipped with skills and knowledge to navigate the new technology without causing lots of errors that can be expensive for the organization to correct or

reverse. It is therefore necessary for institutions to set aside funds for initial and subsequent trainings and support to its staff if the institutions are draw full benefit of the new technology in their performances.

7. Recommendations

- The E.U library system should have predetermined regular trainings on the Amlib software as opposed to the current situation. In having pre-determined regular trainings, staff shall be aware of the period they will be retrained such that they will be able to share during retraining, the challenges they will have encountered in the course of duty.
- The training of few staff should be done away from the working area so as to reduce or avoid interruptions by other emerging work-related circumstances.
- 3. In future the training should use the prototype models as instructional materials for all modules of the software. This shall help the library reduce on the training cost that is currently offered only on the active modules paid for. The models shall provide learners with practical view of the entire software and its interfaces and shall be used to evaluate the skills acquired.
- 4. Status of staff working area need to be improved to enhance concentration in order to match the status of work and that of the library by being designed in such a way that it will be free from congestion, noise and distractions by other on-going activities such as the photocopying and reprographic services.
- A staff-work schedule be introduced that shall allow staff to proceed for short breaks between working hours, with intention to reduce fatigue emanating from work pressure due to long hours of concentration.
- Periodic staff rotational of duties in a given library section shall help staff be relieved the pressure of work. This would drastically reduce the human errors of negligence, forgetfulness, inattentions, slips and memory lapses.
- Carry out periodic surveys on staff performance with a view to identifying areas where staff require further training or retraining.
- 8. There should be check-in and check-out desks where verifying officers are able to log-into the Amlib to verify the authenticity of every loan issued or validity of exiting documents from the library. The check-in desk could be used to "mark" with a purposely designed stamp, all library books being brought inside the library, so as to discourage library defaulters from dumping overdue books on library shelves before getting them cleared.
- The Amlib software training manuals should be availed in all areas of the software undertakings so that library staff can refer to them when need arises.

ACKNOWLEDGEMENTS

I would like to thank the Almighty God for the far He has brought us in our academics. Special regards goes to my supervisors Prof. Jason Githeko and Dr. Lucy Wathika for their unrelenting technical support in the co-authorship of this research paper. We wish also to thank the Egerton University library staff for their ideas and cooperation during data collection. We cannot forget to appreciate the Egerton University Njoro in providing the facilitations we required to carry out the research.

God Bless you all.

REFERENCES

- [1] Anderson, R.J. (2008). Security engineering: a guide to building dependable distributed system. New York: John Wiley.
- [2] Desai, R. (2010). Human error. Mumbai. *an educational blog*. Retrieved January 10, 2019 from drrajivdesaimd.com/.
- [3] Gerhart, M. (2015). Database abuse. Retrieved on 14/4/2019 from; http://www.imperva.com/.
- [4] Kimaro, H.C. (2017). Strategies for developing human resource capacity to support sustainability of ICT based health information systems: a case study for Tanzania. *Journal of Information Systems in Developing Countries*. Wiley Online. Retrieved March 20, 2019 from https://doi.org/10.1002/j.1681-4835.2006.tb00171.x.
- [5] Kothari, C. R. (2008). Research methodology: methods and techniques. New Delhi: New Age International.

- [6] Maurer, Roy (2015). Top database security threat and how to mitigate. Retrieved December 6, 2018 from https://bit.ly/30DfOgv.
- [7] Mutula, S.M. (2012). Library automation in sub saharan Africa: case study of the University of Botswana. West Yorkshire: Emerald Group Publishing Limited. Retrieved February 12, 2019 from https://bit.ly/2M0roiH.
- [8] Norman, D. (2013). The design of everyday things; rev and expanded ed. New York: Basic Books. Retrieved July, 12 2017 from https://bit.ly/2YIgRu8.
- [9] Nyamboga, C., Ongus, R. and Njuguna, A. (2012). Impact of the Amlib integrated library management ystem on information management practices at Egerton university library, Njoro campus, Kenya. Njoro: Egerton University. Retrieved May 18, 2019 from https://erepository.mku.ac.ke/ handle/123456789/3866.
- [10] Rach, A. (2014). Introduction to circulation and types of circulation systems. Retrieved 5th February 2019. from; http://www.rcls.org/libland/autp/dynix.htm.
- [11] Reason, J. (2012). Human error: models and management. Retrieved on May11, 2019 from www.ncbi.nlm.nih.gov/.
- [12] Simard, S. [et al] (2018). The importance of user training during software training. Retrieved May10, 2019. https://bit.ly/2K3hIBm.
- [13] Sindhav, R. & Patel, U. (2014). Automation in academic libraries: need and purpose. *International Research Journal* of Mathematics, Engineering and IT 1 (2). Retrieved March 22 August 2019 from https://bit.ly/2HEqdkK.
- [14] Strickler, (2000). End User training. Retrieved May 10, 2019 https://bit.ly/30NIiUY.
- [15] Ward, P. (2012). Database Management Systems. Sydney: Cengage Learning EMEA.