academicresearchJournals

Vol. 9(1), pp. 26-30, January 2021
DOI: 10.14662/IJALIS2021.010
Copy © right 2021
Author(s) retain the copyright of this article
ISSN: 2360-7858
http://www.academicresearchjournals.org/IJALIS/Index.htm

International Journal of Academic Library and Information Science

Full Length Research

Use of Library Ergonomics to Boost up Working Efficiency of Library Professionals

[1]Narkhede, S. P. and [2]Dr. Sarode, R. D.

[1]S. J. College of Social Work, Yavatmal. Corresponding author's Email- sudhirpn81@gmail.com
[2]Dept. of Library and Information Science, Sant Gadgebaba Amravati University, Amravati
Email- smilerdx@rediffmail.com

Accepted 11 January 2021

This paper focused on the improvement of working efficiency in the library staff in contest of library workplace design and environment by applying ergonomics principles in their daily work activities. Library Ergonomics is to fit the task to the individual, to use the Library workplace, facilities, and equipment's properly. Practicing good library ergonomics archives increased productivity, improved health and safety, higher job satisfaction. The ignorance of these important Library work environments will lead to work stress. Implementation of Library ergonomics make library professionals more efficient by creating an environment that allows for good postures, less exertion and better height, reaches to create a much more productive staff.

Keywords: Library Ergonomics, Benefits, Library workplace design and environment.

Cite this article as: Narkhede, S.P., Sarode, R.D. (2021). Use of Library Ergonomics to Boost up Working Efficiency of Library Professionals. *Inter. J. Acad. Lib. Info. Sci.* 9(1): 26-30

INTRODUCTION

Ergonomics is Concern with interaction between users and their technical tools and environment; it is a science of designing workplace or work environment to provide healthy, comfortable environment to its users and make it more efficient as well as effective (IEA, 2000).

Ergonomic design focused on physical and mental capabilities of its users can be influence by the facilities provided to him as well as workplace environment. Ergonomic design of workplace promotes good posture, less repetitive motions, easier height and reaches, and less exertion to enhance work quality and efficiency. It improves work involvement and morale by avoiding fatigue, mind absenteeism and discomfort during their work day.

However, Zafir, Durrishah and Mat Rebi (2007) stated if management does not address discomfort, an employee will act on a subconscious level, adapting behaviour to lighten the pain, thus affect performance and it becomes safety issue. The safety issues are such as work stress, absenteeism, and low productivity. Work stress was defined as the harmful physical and emotional responses that occur when job requirement do not match the worker's capabilities, resources, and needs (National Institute of Occupational Safety and Health, 1999).

The Occupational Safety and Health Centre (2009) reported that the exposure to ergonomic hazards made up the bulk of reported occupational complaints. The increasing number of workers affected by poor work design make ergonomic issues important. According to Atkins (2005) achieving an ergonomic work environment

entails checking and changing the layout of the work area, deploying ergonomic equipment and tools, and implementing education and training programs to promote safe work practices.

REVIEWS OF PAST RELATED STUDIES

In highly competitive academic environment, the library is an essential component of an institutions intellectual expression. Libraries must design there space in such a way to support learning, Study and research. Ergonomics is an important aspect of design ergonomics is a scientific discipline concerned with improving productivity, Health, Safety and Comfort, and helping people and technology work together. Ergonomic Design Should Support humans in achieving operational objectives (Chandra et al. 2009).

Ergonomics is the study of how working conditions and equipment can be arranged in order that people can work with them more efficiently. As computers are probably the most omnipresent type of machine in today's work and learning environments, the issue of ergonomically sound interaction with them has become evident. In general, computers are clean, quiet and safe to use. However, poor interaction with and poor positioning of computer equipment can lead to health problems, such as eyestrain, swollen wrists and backache. Problems can be avoided by good workplace design and by good working practices. Prevention is easiest if action is taken early through effective analysis of each workstation. There are a number of practical steps that can be taken to achieve an ergonomically positive environment and, furthermore, to promote a safer learning environment. (Mahalakshmi and Sornam, 2011)

LIBRARY ERGONOMICS: A CONCEPT

Today, library and knowledge resource centers are moving with rapidly changing technology. More and more works are done with the machines that apparently speed up work but, sometimes they can workless, motivating and boring. Technical library tasks such as cataloging, indexing and Circulation Service are done with computers because of the acclaimed repetition of these machines for efficiency and high productivity. On other hand, there is an important and vital element and evidently the most unpredictable in a workplace system – the human, have the ability to make and use technological tools such as computers that need human intervention to completely attain their full potential when they used in libraries.

A library is an organized collection of information resources made accessible for reference or lending. It provides physical or digital access to material and may be a physical building or room, or a virtual space or both (Allen, 1984). A library collection can include books, periodicals, newspapers, manuscripts, films, maps, prints, documents, microform, CDs, cassettes, videotapes, DVDs, e-books, Audio books database and other formats. Libraries range in size from few shelves of books to several items. Library is a place in which literary and artistic materials such as books, periodicals, newspapers, pamphlets, prints, records and tapes are kept for reading, reference, or lending, hence the library can be generally described as an essential part of an institution and research. It serves an academic environment, therefore the comfort of users of the library is paramount as this would ensure optimum output of its users such as increasing academic performances of students, encouraging effective study and research; hence it is necessary for every institution to consider ergonomics while designing its Library as this would affect its overall productivity.

BENEFITS OF LIBRARY ERGONOMICS

There are numerous benefits by using library ergonomics design. The primary benefits are given below.

- **Maintain Employees Health:** One of the most important benefits of ergonomics is that it helps to keep the Library staff healthy. It saves them from many physical hazards like back pain, wrist pain, neck pain and many more. An office meeting the parameters of ergonomics will have energetic individuals with lesser risk of medical issues. For example, if you have a comfortable seat and adjustable PC, your body mechanics will work fine avoiding muscle strains. On the other hand, an uncomfortable workspace will increase your chances of getting aches or falling sick.

- **Improvement in Work Quality:** When the working conditions are challenging, the employees are more vulnerable to mistakes. For example, if you have to squint to look at your computer screen, there is a possibility of messing up. An irritating seat or an uncomfortable footrest can also throw you off, inducing mistakes. Therefore, a comfortable workplace is essential in keeping you alert and minimizing the chances of errors.

- **Employees Interest and Engagement:** no one would like to go regularly to an office where spending time is a struggle. Everyone wants their workspace to be according to their requirements. If you are lucky enough to have this luxury, you will like to spend more time on your desk. By doing so, you will explore many new aspects of your job that is impossible otherwise. So, having an ergonomically-optimized environment makes

the employees interested in their workspace and eventually their job.

- **Increases Productivity:** The comfort of a staff can have a huge impact on his performance. An unfavorable environment of the workplace takes a toll on a person's ability to concentrate. Ergonomics provides an appropriate atmosphere for the employees at the workplace. Having a good posture, straightened eye level, limited effort and motions can have a positive impact on your body. When you feel healthy, you are more likely to be creative and productive. Without ergo-friendly environment, you are most likely to have tired and frustrated employees. An employee facing any discomfort will be more focused on discomfort instead of his work. Due to this reason, their quality of work also drops down along with their productivity. Ergonomics helps the employees to be mentally and physically relaxed, keeping them motivated. This way, they put in more effort in their work resulting in better quality.

- **Reduce Compensation Claims:** Making Library workplace ergonomically-optimized might seem to be costly, but it is not. It can save the library from spending loads of money on compensation or medical bills. In a challenging workspace, the employees are prone to injuries and other health issues. These conditions can affect the productivity of the organization due to the frequency of Library employee's absence. A lesser number of employees showing up at work mean a lower return on investment for an organization. The best part is that ergonomics requires a one-time investment that can have a long-lasting impact on the Services. So, it is important to provide employees with a favorable environment to generate outstanding Results.

- **Strong Work Culture:** The Library employees working at a place suitable for them in all aspects tend to be in better moods. The reason is that their minds are in peaceful state that keeps them content with their job. They not only interact with their higher authority cordially but amongst each other as well. It leads to friendly and high-spirited work culture. When everyone is in good terms with each other, it creates a positive vibe within the Library office. Employees share ideas and help out one another with good intentions. Optimistic and healthy working environment keeps employee works up to their full potential.

- **Enhances Loyalty:** When you have physically and mentally suitable environment for your employees, they respect you for that. It strengthens the loyalty of the employees for the Department, and they are likely to stay for a long time. On other hand a challenging workplace will have bitter employees with no regard. They don't find any reason to be faithful with their Department and will cash on any opportunity to leave.

- **Motivation:** There is no chance of progress if the library employees are in any discomfort whether it's mental or physical during their working hours. The performance and dedication of employees are directly related to their well-being. If they are unhappy their workspace, they will never work efficiently. A workplace meeting all the demands of ergonomics can produce more constructive ideas and motivated individuals.

LIBRARY WORK ENVIRONMENT

Ergonomics used to design Workstations and workspaces for maximum Comfort and healthy environment. Workspace arrangement of the individual workspace is important especially when the work is performed in either the sitting or standing position. It depends largely on the type of work being done and the equipment being used. The physical arrangements must permit correct and appropriately supported work posture and unimpeded movements by each library staff. This has two benefits: it allows the employee more space and encourages them to get and move about from time to time.

The following requirements need to be focused for library workplace design

- horizontal work area;
- work height (the height at which the hands are working);
- adequate viewing distances and angles;
- sufficient leg space for seated or standing work;
- sufficient head space for adequate clearance for the tallest person when standing straight;
- reach distances should not exceed those of the smallest people;
- seat – area needs to be sufficient for easy access and correct adjustment;
- hand tools – both use and storage;
- all loads including tools should be stored so that they can be handled close to the body and at about waist height. Avoid deep storage bins; low, deep or high shelves for heavy or awkward items and ensure that walkways are kept clear;
- fixed and moveable equipment – proximity to the work area, access, use and storage; (McPhee Barbara, 2005)

Horizontal work area- These spaces need to include the use of materials, tools and equipment in the primary and secondary work areas and in the seldom repeated activities in the tertiary work areas. The bench or desktop

should be as thin as possible where people are seated, usually no more than 50 mm. This allows the arms to hang by the side and manipulative tasks to be carried out at a comfortable height (about 500mm below elbow height) (McPhee Barbara, 2005)

Working position- a sitting position is generally preferred for fine manipulation, and accurate control work; continuous light manual work; close inspection (visual) work; and where foot controls are regularly used. In sitting there should be enough space between the underside of the work surface and the seat for the legs and to allow movement. For standing work toe space should be at least 150mm in depth and height.

An operator should be seated for constant or repetitive use of foot controls. Where multiple functions are carried out, the foot should be used for the grosser controls and the hand for the finer controls (McPhee Barbara, 2005)

A standing position is preferred where heavier manual handling work is performed; where there is no leg room under equipment; or where there are many controls and displays over a wide area that have to be monitored. Standing work requires even, resilient floor surfaces such as rubber matting or carpet. This also reduces the risks of slipping. Opportunities to sit or stand during the day, preferably as part of the job also should be included. Large and smaller users should be accommodated in these arrangements. This may be achieved with height adjustable seating, height adjustable work benches or an adjustable standing platform.

Work height- preferred work heights depend upon the nature of the task and the need for visual and manual precision as well as the handling of heavy components. In most manual tasks, the work height should be at a level just below the elbow with the upper arm held in a vertical position close to the body. For fine work involving close visual distances, the work height should be raised to achieve this with minimal neck flexion and arm supports provided where appropriate (McPhee Barbara, 2005)

Viewing distances and angles- viewing distances for work should be proportional to the size of the work object. A small object requires a shorter viewing distance and a higher work surface. The most frequently viewed object should be centered in front of the worker. Recommended viewing angles vary depending on the work posture from 45° (forward leaning posture such as at a desk) to 15° (backward leaning such as in a control room) and how long a fixed gaze is required. Bent neck postures should not be maintained for more than a few minutes at a time without change. Distances should enable young and older workers to see properly without strain on the eyes or the muscles and joints

Reach- arm and leg reach should be based on the dimensions of the shortest user and take into consideration the postural, task requirements and working position.

Access and clearance- space allowances for horizontal and vertical clearances and access to The workstation; access to machines and equipment used by operators and for maintenance Personnel must be incorporated into the design of the work stations these allowances must be based on the dimensions of the largest user.

Hand Tools- all tools should be stored so that they can be handled close to the body and at about waist height. Avoid deep storage bins; low, deep or high shelves for heavy or awkward items and ensure that walkways are kept clear.

Tools are devices designed to extend human physical capabilities of reach, force application and precision movement thereby enhancing performance. Unfortunately they can also be a source of injury when inappropriately used or incorrectly designed. Fixed and moveable equipment- proximity to the work area, access, use and storage

CONCLUSION

Ergonomics has been used to design work places for maximum comfort, optimal transfer of information, and reduction of noise and vibration. It is used in the selection and installation of appropriate video display units in automated offices. It has led to redesigned hand tools, chairs, and work counters; to improvements in lighting, heat and humidity control, and noise reduction; and to development of principles for the design and layout of offices.

REFERENCES

1. Atkins, S.A. (2005), The pain in storage: Work safety ina high dencity shelving facility. Libraries and the academy, 5(4) pp., 483.
2. Alves, C. (2010), How to use an ergonomic office chair correctly, pp. 1-3.Retrieved on September 9, 2019 from http://ezire.com.
3. Allen, R. E. (1984): The Pocket Oxford Dictionary of Current English, Oxford: Clarendon Press; p. 421
4. Beckett, R., (1995), Are you sitting comfortably? Facilities, 13 (12), pp. 26-27. In Zafir, M. M., Durrishah, I., and Mat Rebi, A. R., (2007), “Ergonomics design on the work stress outcomes,” Journal Kemanusiaan, Vol. 9, pp. 50-53. Retrieved on October 11, 2020 from http://eprints.utm.my.
5. Chandra, et al. (2009). Ergonomics issues in Academic

Libraries in Kolkata, West Bengal: A Pilot Study. Library Philosophy and Practice (e-journal). Paper 279. Available from http://digitalcommons.unl.edu/libphilprac/279

6. Chelsea, G., (2010), Ergonomic Design, Retrieved on September 5, 2020 from http://www.davincicenter.vcu.edu/about-innovation-3/ergonomic-design/
7. Harel, T., (2008), Ways to have an ergonomic workplace. Retrieved on September 20, 2020 from www.articlesnatch.com.
8. International Ergonomics Association, (2000), Executive Council definition. Available from http://www.iea.cc, (Accessed 10 July, 2020)
9. International Labour Organization (1986), psychosocial factors at work: recognition and control. Occupational safety and health series, No. 56, International Labour Office, Geneva. In Leka, S., Griffiths, A., and Cox, T., (2003), "Work organization and stress," Institute of work stress, Institute of work, health and organizations, No. 3, pp. 1-25. Retrieved on September 5, 2010 from www.who.int.
10. Mahalakshmi and Sornam. (2011), Ergonomics and techno Stress among Library Professionals of engineering colleges of Anna University. Singapore Journal of Library & Information Management. 40. pp., 89-101.
11. McPhee Barbara.,(2005), Practical Ergonomics : Application of ergonomics principle in the work place, pp., 45-48.
12. National Institute of Occupational Safety and Health (NIOSH), (1999), Stress of work. Centres for disease control and prevention, U.S. Department of Health and Human Services, No. 26, pp. 99-101. In Park, (2007), "Work stress and job performance." Retrieved on October 11, 2020 from www.statcan.gc.ca
13. Ogedenge, T.I., (2015). Ergonomic Appraisal of a Nigerian University Library. International Journal of Science and Technology, 4 (2)., pp., 57-64.
14. Park, (2007), "Work stress and job performance." Retrieved on October 11, 2019 from www.statcan.gc.ca. Office Lighting and Computer Work Station. Retrieved on September 8, 2019 from http://ehs.sc.edu/Ergonomics/Office% 20Ergonomics%20-%20Office%20Lighting.htm.
15. Oldham, G.R. and Rotchford, N.L., (1983). Relationship between Office Characteristics and Employee Reactions: A Study of the Physical Environment. Administrative Science Quarterly. 24: 267-284.
16. Zafir, M. M., Durrishah, I., and Mat Rebi, A. R., (2007), Ergonomics design on the work stress outcomes, Journal Kemanusiaan, Vol. 9, pp. 50-53. Retrieved on October 11, 2020 from http://eprints.utm.my