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ENHANCEMENT OF HUMAN PERFORMANCE WITH DEVELOPING ERGONOMIC WORKPLACE ENVIRONMENT AND PROVIDING WORK-LIFE BALANCE

HENRIETTA FINNA, PH.D.,
Assistant Professor, Department of Management and Corporate Economics, BUTE, Hungary

TAMAS FORGACS, PH.D., Vice president
Hungarian Telework Association, Hungary

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Abstract: Ergonomy aims at creating a work place that suits the employee's needs. A well-developed office does not only increase work efficiency but it can also significantly reduce costs. This study researches and reveals the specific personal attributes and the factors of workplace environment, which have an effect on the efficiency of the workforce. We were searching for studies, where the core work wasn't changed -the increase in work efficiency was reached only by changing the work environment.

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Introduction

Ergonomy is based on the connection between the employee and its work environment. Work environment consists of different areas, such as the actual physical environment (including temperature, lighting, noise, equipments in the office, the employee's personal space and right posture), the psychological and social environment (such as labor demand, personal connections, work relationships, the physical and psychological characteristics of the employee) and it also includes the effects of how work is organized and what tasks are delegated.

A well-developed office - which suits the employees' needs - can contribute to higher work efficiency. The most important aspects of ergonomy that should be considered when creating an office are the lighting, noises, personal space and climate of the office. Lighting in general examines aspects such as how well lit the place is and how much direct light is used. Noises should be avoided as much as possible or if not possible, the use of soundproof materials is suggested. A certain amount of personal space should be provided and the climate of the office, meaning temperature, humidity should be considered as well (Barany, 1999).

Elements of work environment

It is important to recognize that all work environments are unique and the ergonomical utilities should be maximized based on their uniqueness.

Collecting information on the main problems can happen with the help of questionnaires, observations or interviews. Most of the problems at offices concern the back, neck, shoulders and the eyes, which is the result of poorly designed work furniture but problems also appear because of lack of workspace, which leads to tiredness.

Lighting of the office is one of the most important considerations in ergonomy. If the place is not well lit, it can easily cause tiredness of the eyes, which can further on result in headaches, irritation and tiredness. Lighting problems can be derived from poor illumination, the high density of luminance, too much of contrast and if the color contrast between the object of the activity and its environment is not proper.

The basic idea of creating the right lighting is that light should be directed onto the place of the activity, while the background should be also lit, but in a smaller amount. The optimal solution is if the employees can control the amount and direction of light and therefore they can have an influence on their work place. It is also important that the illumination gives the impressions of natural light.

When creating the lighting of the office, attention should be turned to the following:

- older people need more light than younger people;
- no light should be directed towards the eyes; light clothes, surfaces should be avoided because of reflection of light;
- both light and shadow are needed for the right perception; therefore diffused light should be replaced by direct light;
- the colour of light matters as well. "Cold colours" are unfriendly, while too colourful sources of light make the differentiation of colours difficult. The best solution is if the light's colour is close to the Sun's.

Noises at the work place have serious effects too. According to estimates, one fourth of people suffer from noises. It is based on the individual's psychological and physical characteristics how much he is disturbed by noises. In offices the main sources of noise are energy providers and air-conditioners.

It is not enough however to have noise levels under the norm set by law but it is also important to make psychological considerations as well. The level of noise should be such that does not make people's concentration difficult, and that allows people to talk to each other. In an optimal solution, the source of noise should be eliminated but in case it is not possible, therefore structural changes or the use of soundproof materials is another option.

According to different researches, an inspiring work environment is necessary for work efficiency, for which plants in the office are necessary. A study at the University of New Jersey - published in April 2005 - shows that when employees can choose between money or the gift of flowers, they prefer the latter. Therefore, plants are a good way of showing appreciation to employees. Another recent study of

dr. Ulrich's state that plants can increase problem-solving skills and generate better ideas (White, 2006).

Another researches shows results, how plants can be of help to de-stress offices. Dr. Lohr's study - published in 1996 -tested the work efficiency of participants in two settings: in one with and another without plants. The study showed that plants could increase post-task attentiveness and reaction time by 12%. Dr. Ulrich's study in 1992 also stated that visual exposure to plant settings results in fast recovery from stress. Therefore, through reducing stress flowers can increase efficiency (Gilhooley, 2007).

Study made in 2006 was to examine the impact of sporting events on the workplace and on employees' communication skills. The results showed that talking about sport events encourages social inclusion and bonding. It can also improve mood, motivation and productivity through conversations. By discussing why teams won and how individuals contributed to the success of the team, it can boost morale and create team spirit. Companies are therefore advised to organize sport events and encourage conversations among employees in order to achieve higher work productivity (SIRC, 2006).

Studies show that screensavers with natural backgrounds can reduce stress at work places. The reason behind this finding is the need for people to be outdoors, in the nature, watching flying birds, flowing water, lovely flowers, animals moving around in the jungles, and all such situations can help people get relaxed and fight stress. Watching relaxed objects can make people relaxed, even if it is not a static image. Therefore even screensavers that have images of nature such as flowers, mountains, streams, birds, clouds, sunsets, waterfalls, beaches, animals etc. can have a positive, de-stressing effect. Watching them will relax frayed nerves. Some screensavers even have beautiful music accompanying them. These can all soothe nerves and can help energize people for work again. Some screensavers also have text messages appearing along with the natural visuals. Reading such messages also helps to get re-motivated for the work ahead. Thus screensavers are a very effective method for self-relaxation (Mohatta, 2007).

People are in need of a certain amount of personal space as well. Ideally, each employee should have his own office. If it is not possible, workspaces can be separated with furniture, shelves, equipments and employees can be surrounded by their personal belongings.

Office chairs should be designed like so that position and height are adjustable.

As far as climate is concerned, temperature is very important but not the only aspect that should be considered. Humidity and ventilation have to get some attention as well.

Importance and opportunities of work-life balance

At present many companies offer backup childcare for working parents, which seems to have a positive effect on work-life flexibility and work efficiency. The offered service could be a childcare center within the office building or another one close to the work place. Daycare means cost saving for companies because of a decreasing number of missed workdays and a higher productivity of employees. It is also an optimal solution for both parents and children, since parents can check up on their children even during the day (Elswick, 2003).

Taking care of the elderly is a significant problem at present, which is especially true in case of the baby boomers' generation. Having to look for daycare options and taking care of the affairs of elderly parents may result in absenteeism, workday distractions or stress-related health problems, leading to a lower work efficiency. However, there are many ways companies can help their employees. They can either help them find geriatric case managers to guide them through the processes or they can offer backup care for emergencies. Another helpful option is offering telework possibilities (Gross, 2006).

During telework different work activities are carried out in different locations. It is possible to distinguish between 3 types of teleworkers: homeworkers, who do not have an office, mobile workers, who work on their way and employees working in telework centres. Offering telework is beneficial for employers because of cost cuttings since they do not have to provide their employees an office. The benefits for employees are numerous: they can create a more flexible, better schedule, they can have a bigger autonomy, and they commute less. These advantages lead to an increased productivity. However, a significant problem is that if not taken care of, employees can get too isolated from the company and from their colleagues. Therefore, employers should still encourage internal communication (Electronic Journal of Organizational Virtualness, 2007).

In many places of work, there are opportunities to set up your schedule so that you regularly work some of the time at home. This will depend on the kind of work you do, of course, and your access to the equipment and resources you need at home that would allow you to carry out your work efficiently. Your workplace may have a specific policy to allow employees to set up flexible schedules, including paperwork that outlines the boundaries, or this may be arranged in a more informal way through your supervisor. Flexible work time may also mean varying the hours you work, for example coming in earlier, or working longer but fewer days, on either a regular or specific time basis (Perrin et al., 2004).

With the development of Information communication technologies (ICT), teleworking is getting more and more productive. However, employees' self-motivation towards telework is crucial to a high productivity, which could be generated by telework trainings offered through HR policies. A recent study by eGap examined in 5 European countries whether cultural aspects influence the success of telework. As the results show, it highly depends on the country's cultural background if telework can bring a higher productivity (eGap, 2005).

So far sleeping on the job has been considered as something that should be avoided by all means. However, that may be changing. Companies have to understand the value of letting their employees take a nap at work in order to be more productive. Therefore some employers have decided to allow employees to have a bed in their office and take a nap at work time. One of the reasons for the changing attitudes towards sleeping at work (as opposed to sleeping on the job) is the growing recognition of the cost to business of sleep deficiency among employees. These costs include: increased errors and accidents, increased absenteeism, increased drug use,

increased turnover, higher group insurance premiums, decreased productivity. It is necessary to understand the importance of good sleep to health, productivity and safety, the consequences of lack of sleep and poor sleep, and to find out what can be done to improve employees' sleep problems (Reh, 2005).

Educating all staff about mental health and mental health problems is fundamental to ensuring a mentally healthy workplace. Staff should be aware of their own mental health and how to manage it. Meaningful education will also reduce stigma. While training could be done in-house, [Andrew McCulloch] says: "Evidence has shown that in-house training by HR departments is not ideal; training should ideally be experiential and carried out by mental health professionals" (St. John, 2006).

It is too easy to judge workplace design subjectively in terms of aesthetics and to forget the more tangible issues that affect costs and profitability. A well-designed office can reduce a company's overall space needs, improve the efficiency of its facilities management, support flexible working, provide the enhanced environment and "buzz" that the most talented people want - and be of measurable financial value. In order to make the most efficient use of space in their design and to understand how much space an organisation really needs, interior designers use a variety of methods: space-use study, storage/filing audit, "block and stack," questionnaires, interviews and workshops.

To allow a business to function with more people in less space, creative design solutions are needed. Good office design also helps to change organisational culture (Davies, 2003).

An ergonomically sound office is one solution to increasing efficiency, productivity, and contentment in an office. Work-related musculoskeletal disorders are potential physical outcomes for workers using poorly designed office equipment, furniture, and workspaces or those with inadequate employee training in ergonomic practices. Other injuries or discomfort resulting from exposure to ergonomic risk factors, such as static postures and repetitive motions, include decreased blood circulation, visual problems, headaches, and fatigue. Some steps for practicing sound ergonomics are presented: 1. Learn what is and what is not ergonomics. 2. Ergonomically assess your existing office environment. 3. Practice sound ergonomic work processes and postures. 4. Invest in ergonomic furniture and equipment. 5. Train yourself and your employees in office ergonomics (Fritscher-Porter, 2003).

Conclusion

To reduce the costs associated with injuries and wasted effort, ergonomic principles should be applied to every possible work area to boost productivity and efficiency, and to improve human well-being. This frugal, practical approach meshes well with the lean manufacturing philosophy that is in implementation in many workplaces. According to Kincaid, one benefit is that ergonomics becomes accessible to more people when it is simplified. The second benefit of using a simpler ergonomic approach is that jobs are assessed in a time-efficient manner and conclusions are reached more quickly. To be worthwhile, the end result must be real changes in the workplace based on application of ergonomic principle. The straightest route to application is usually the best. Another practical aspect that can help the effectiveness of ergonomic work concerns the basic premise of ergonomics. If ergonomic changes can be accomplished simply, with the least possible bureaucracy and the greatest visible, tangible improvement, the cost-efficiency of the results is better.

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