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Effects of Interactive Environment on Occupational Health and Safety

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The Interactive Environment is a definite relationship between human and his/her surroundings maybe it will be one's own work space, the space where a human has to converse with its work. We may designate this space as an interactive space where people try to build a mutual relationship with his/her specific objectives. By experiences of human being a designed relationship-environment will be developed. The built environment will become an interactive and adaptive entity. Generally, we depict it as human-computer interaction, where this human tries to make relationship with computer through interfaces. These interfaces give birth of a new era of interactive environments.

The complexity of this environment is the crisis of recognition where all other terms come in a line: identification, user interface dialogue and finally user-friendly system. If we enter more deeply in to the crisis, we may come across the reason/s behind these obstacles, may be created by human without giving more importance to the natural law and effect of natural law as human behavior.

There is no single reason, may be hundreds of reasons for a single interactive mistake. Analysis of which will open a horizon of conditional errors created by human. Most interestingly, human creation creates difficulties in human uses. Complex Human language and translation of human language in very complex way creates the real problem. "Try to find out most simple way of representation" is also a very difficult task. Very simple representation may cause a situation of a very difficult way of understanding.

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Interactive environment is based on the way of good and proper understanding. Designers should think about the users before creating the interactive environments. Physical and mental status should be identified, judged and applied in environment to feel them good and comfortable.

Language, the method of human communication either spoken or written, is the prime concerned of this environment. Language that can be understood by a specific group of human or by all that must be decided before application. Majority should be given priority: again, in which situation? Pictorial representation is more acceptable than representation through language but that also depends on conditions of applications.

Figure 1: Instructions in one language

Good communication will be the result of continuous feedback, which may be represented as a loop. When in the interactive world, we give more emphasis on the understanding, which will be predicted by the loop itself. The process may be estimated through a very simple method of identification of recognize - act cycle time. Number of cycle and time for completion of one recognize - act cycle is the measurement of efficiency in interactive environment.

Several steps can be taken before the building up of the proper environment:

1. Selection of language
2. Way of representation
3. Identification of understanding
4. Estimation of feedback loop

These stages may be performed in a simulated condition, where human and his/her system will make a platform of understanding. Go for simple instructions in a specific language and then judge the action of the receiver in time and reply. This way, anyone can predict the performance of the interactive environment.

Sometime the receiving end will become confused when Instructions are given in multiple languages.

Figure 2: Instructions in different languages

The confusion is like supporting the Hick's law, or the Hick–Hyman law. It describes the time takes for a person to decide as a result of the possible choices he or she has: increasing the number of choices will increase the decision time logarithmically.

In case of understanding, this representation will increase the time of action. Use of multiple languages in instruction in a common space decreases the efficiency in interactive environment.

Multiple colours also may create confusion to first time receiver. Again, time of interaction will be enhanced, and it can be marked as failure in transmission of information.

Way of representation of information should be very simple and direct and restriction in presentation (not more in a limited space) must be maintained properly. The step of way of representation is the most important stage in the installation of Interactive Environment. Here, a question may be asked about the utility of this environment on occupational health and safety promotions. The answer is in the initial part of the environment – the understanding.

Figure 3: Colour Instructions

Problems in understanding in interactive environment may initiate some physical and mental problems which in turn act as the causative factors for bad health and accidents. The two important key events of interactive environment are human cognitive process and information processing. These events are sub grouped as follows

a) Attention,
b) Sensation,
c) Perception,
d) Memory encoding/ retrieval,
e) Reasoning and
f) Cognition

All the common events have common process of decision making or reasoning which ultimately lead to cognition or recognition of information.Difficult in understanding increase the level of stress which decrease the power of decision making that leads to system failure or accidents.

An adequate attention is required for the development of this unique domain in ergonomics- the interactive environment. This in future will contribute in product design with proper care of detection of unsafe health.

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