

Book Reviews

Three monographs on the application of technology in education, published by ERIC Clearinghouse, are reviewed.

Instructional Facilities for the Information Age by Frederick G. Rnirk, Syracuse, NY ERIC Clearinghouse on Information Resources, Syracuse University, 1987.

Reviewed by Gary M. Boyd

This booklet is intended as a practical aid for anyone who has to design and equip places (laboratories, carrells, classrooms, etc.) for instruction. It should prove invaluable to educational technologists who are involved in instructional project design or management, and also to school architects.

Fred Knirk has pulled together in one place, in succinct form a great deal of research-based information on ergonomics and comfort for various kinds of individual and group learning places especially where computer and audio-visual/video technology is employed.

Although the main reasons for the lack of impact of educational technology have to do with the shortage of good software of all types, and with the ideology of schooling, a very important secondary cause of rejection is discomfort. Moreover much such discomfort is subliminal, involving fatigue and lowered cognitive skills without any obvious cause. The net effect then can be aversion toward the use of the new instructional technology without awareness that the real causes are in improperly designed facilities.

Cold fluorescent lighting is tiring, erratic noise from adjacent users interferes, there is not enough space in carrells for working materials, poor ventilation is fatiguing, etc. Most of these kinds of discomfort are obvious to any thoughtful person, and the remedies are usually fairly obvious. But the remedies require planning, and politicking, and sometimes cost appreciably more than just putting equipment in existing rooms.

This booklet is especially valuable because it brings together evidence that comfort and ergonomic factors do make a real difference to learning which is

worth paying for. This evidence can be used by a project developer to argue for proper design.

This monograph also supplies a great deal of critical design information about particular factors, where everyday common sense beliefs are often wrong, (e.g., typically, people put VDTs on top of computers so that you have to look up at them, whereas looking down slightly at a 25 degree angle is actually optimal for minimum fatigue).

An interesting aspect of the research is that there are distinct differences in comfort requirements for adults from those for adolescents, as well as the obvious differences for young children, (e.g., air temperature for adults: 70-78 degrees Fahrenheit for children 65-70 degrees Fahrenheit.)

The research on colour is particularly interesting, and relevant now that psychedelic computer graphics are appearing in courseware. In displays, the extremes of red and blue-violet should be avoided for important information and to minimize fatigue. Contrast between equipment and room walls etc., should be minimal. Social areas (arousing hues) should have different colours than secondary-school classrooms or laboratories (blue-green, green, grey or beige). Fluorescent lights if used should be of the full spectrum type, and should be situated and louvered so as not to reflect from VDT screens, to avoid fatigue and eye strain.

The collection of information is quite comprehensive, and is up-to-date to 1986 at least.

After reading the booklet through, one is left with the feeling that virtually every existing instructional facility could be appreciably improved by applying the knowledge given.

Knirk's monograph should be on the working bookshelf of everyone who designs, develops or manages teaching-learning facilities.

REVIEWER

Gary M. Boyd is a professor in the Graduate Programs in Educational Technology at Concordia University, Montreal, Quebec.