



TRAINING RESEARCH ABSTRACTS

Alkire, Armand A.

"The Use of Videotaped Playback in the Fields of Education and Mental Health"
A-V Communications Review, Vol. 17, No. 2, Summer, 1969, pp. 183-99

This review traces the trend from utilization of television as a one-way medium of communication to its involvement in a much wider variety of variables that concern the communications process. The use of television in expository, simulated, and realistic situations is looked at and discussed in relation to the behaviors expected on the part of the viewer. For five years low cost and portable videotape recorders have been available on the open market. During this time, this review indicates that the trend has shifted toward use of the television as an adjunct to the process of communication. One of television's greatest contributions is said to be the power to involve the viewer in the learning process. Studies are cited using television as a tool to explore social interaction. As a medium for information exchange television is depicted as complex because it affords many modes for exchange of information.

Attwood, Dennis A., and Earl L. Weiner

"Automated Instruction for Vigilance Training"

Journal of Applied Psychology, Vol. 53, No. 3, June, 1969, pp. 218-23

The performance of subjects trained in a visual monitoring task with an auto-instructional device was compared with that of subjects trained by practice alone. The experimental group had three 50-minute training sessions on a device which included the standard monitoring task, but allowed the subject to select his signal schedule and call for immediate knowledge of results, or signal cueing (prompting), or both, and to test himself with no training aids available. Subsequent testing on the standard task revealed that subjects trained with auto-instruction showed a much higher detection rate than the control group, with no increase in commissive errors. Reasons for the success of auto-instruction in vigilance training are discussed.

Caylor, John S.

Relationship Between Army Recruit Characteristics and First Tour Performance

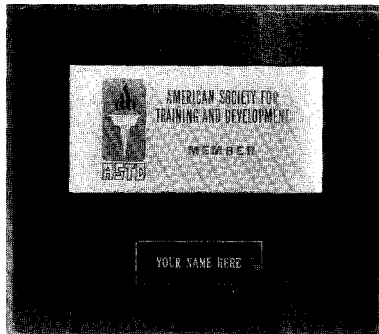
HumRRO Technical Report 69-5, Apr. 1969, 30 p., The George Washington University Human Relations Research Office, 300 N. Washington St., Alexandria, Va. 22314.

"A follow-up study of recruits, whose adaption to the Army was initially studied in Basic Combat Training in October-December, 1961, was conducted to determine their performance subsequent to BCT and their degree of success in the Army in relationship to recruit characteristics observed during BCT. Administrative data were collected on 1,782 volunteers and 2,620 draftees in 30 BCT companies by means of questionnaires completed at the time of their termination in 1963 and 1964. It was found that the older, better educated, higher aptitude recruit adapted best, performed best, and contributed most to the Army throughout his period of service. There was a positive relationship between judgments of BCT peers and subsequent performance. The more favorable the recruits' early attitude toward the Army, the less contribution they made to the Army throughout their tour of duty. Recruits from the lower ranges of age, education, and GT were more likely to have problems in adjustment, discipline, and training. Early Army performance (BCT proficiency and sociometric peer ratings) was predictive of later Army success. Early attitudes toward the Army and career orientation showed an inverse relationship to success in or contribution to the Army."

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Couger, Daniel

"Educating Potential Managers About the Computer"

California Management Review, Vol. 11, No. 1, pp. 47-59

The lack of required computer courses in both graduate and undergraduate business education was revealed in a 1966 survey the author conducted. The problem is said not to be a result of disagreement on the appropriateness of computer content in the curriculum but rather with what to teach and the approach to teaching it. This article is concerned primarily with an attempt to answer these two questions. The article covers such areas as what the manager needs to know about computers, objectives in computer curriculum, computer orientated business games, data systems approaches, and specialized courses. A series of problems and suggested solutions are detailed including suggestions on how to cut computer cost per student.

Dickenson, Gary

"The Learning Ability of Adults"

Training in Business and Industry, Vol. 6, No. 5, May, 1969, pp. 54-55, 74-77

Myths which are perpetrated about the ability to learn are said to cripple many an adult's achievement. Most of these myths refer to declining ability to learn with age. From a review of the literature in the area the author finds contradictory results but comes to the following conclusions for trainees: (1) almost anything can be learned by a trainee of almost any age providing that the training process is properly handled, (2) older trainees should be permitted to set their own learning pace and classroom training sessions and outside assignments should be made with these in mind, (3) the pattern of learning abilities changes with age and the ability of trainers to learn will depend on the nature of the material, (4) new material should be presented step by step in the most logical sequence to what is already known, and (5) previous background of trainees must always be taken into account when devising training programs.

Drucker, Eugene H., L. Dennis Cannon, and J. Roger Ware

The Effects of Sleep Deprivation on Performance Over a 48-Hour Period

HumRRO Technical Report 69-B, May, 1969, 25 p., The George Washington University Human Relations Research Office, 300 N. Washington St., Alexandria, Va. 22314.

"An experiment was conducted to determine, for extended periods of work, the effects of (a) working for 48 hours without sleep on the efficiency of the work done, (b) starting work periods at night compared with starting in the morning and (c) rotating jobs. Two-man teams performed a driving task and a target detection task; a control group performed the same tasks, but with provisions for sleep. Results indicate that performance deteriorates over a 48 hour period of work without sleep, and that deterioration occurs primarily at night, or during the subject's normal sleeping hours. Job rotation to introduce another activity did not prevent performance decrements."

Patten, Thomas H.

"A Different Concept of Laboratory Training"

Dunnette, Marvin D., and John R. Campbell

"Reply to Professor Patten"

Industrial Relations, Vol. 8, No. 3, May, 1969, pp. 286-92

Dunnette and Campbell have been major advocates of the position that there is no scientific evidence of the validity or utility of laboratory education as a part of an organization's management development program. They have attributed this in large part to the failure of researchers in the area to rely on systematic observations,



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measurement, and control rather than anecdotal or incidental evidence. Professor Patten, in a somewhat emotional presentation, accuses Dunnette and Campbell of a myopic analysis of the literature and of intellectual arrogance in their approach. He also takes strong issue with their insistence that the laboratory be fitted to the requirements of the academic researcher. In their reply, Dunnette and Campbell claim that in the final analysis Professor Patten is advocating an individualistic or existential approach to the central issues. Effort must be made toward developing criteria for success which are both meaningful and amenable to controlled observation. Until this is done we cannot realistically separate sensitivity training from a status similar to that of individualistic events such as aesthetic appreciation or recreational enjoyment.

Hunter, Harold G., J. Daniel Lyons, Eugene F. MacCaslin, Robert G. Smith, and Harold Wagner

The Process of Developing and Improving Course Content for Military Technical Training

HumRRO Technical Report 69-9, May, 1969, 68 p., The George Washington University Human Relations Research Office, 300 N. Washington St., Alexandria, Va. 22314.

"Curriculum development procedures in use as of 1966 for first-enlistment technical training in the Army, Navy, and Air Force are analyzed. A model process for training curriculum development was defined from training research findings and practices: (a) analyze the system, (b) develop task inventories, (c) develop a job model, (d) analyze its tasks, (e) derive training objectives, (f) develop the training program and (g) monitor the trained product and modify the curriculum. A comparison between this model and the training development procedures in use in the services indicated a need for (a) better procedures for determining the adequacy of training content and the means for improvement; (b) detailed guidance for developing or conducting the first four steps of the model process, criteria for allocating training content to formal instruction or on-the-job learning, performance specifications for graduates, and feedback from training programs; and (c) more opportunities for career fields in training."

Marshall, Hermine S.

"Learning as a Function of Task Interest Reinforcement,, and Class Variables"

Journal of Educational Psychology, Vol. 60, No. 2, Apr. 1969, pp. 133-37

One hundred sixty children high and low on education environment aspects of social class (EE) learned an interesting or uninteresting game under one of five reinforcement conditions: knowledge of results, immediate verbal, delay verbal, delay material, or combination of immediate verbal and delay verbal. Task interest as well as the informativeness and delay of reinforcement emerged as important factors. Low EE children learned the high interest task as quickly as high EE children and more quickly than they learned the low interest task. Contrary to results from prior research, symbolic reinforcement when immediately informative was effective for both EE groups, but delayed verbal reinforcement was detrimental to the performance of low EE children. Material reward hindered performance of both EE groups.

Mooz, William E.

Pilot Training Study

Rand Corp., Santa Monica, Cal., Apr. 1969, 21 p. (Abstracted in *U.S. Government Research and Development Abstracts*, Vol. 69, No. 13, July 10, 1969, p. 31, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151)

"The purpose of the Pilot Training Study is to produce tools with which to analyze the pilot training process of the Air Force in terms of the resources required to train pilots and the cost of pilot training. These tools allow examination of the training courses themselves, and also of the policy factors which drive the need for pilots. The tools developed consist largely of mathematical simulation models which can be exercised on a computer. Two general types of models are involved. The first type is primarily a decision model, and the second type is a parametric resource and cost model."

"Responsive Teaching Devices"

Training in Business and Industry, Vol. 6, No. 5, May, 1969, pp. 52-57

This article is a review of responsive teaching devices either in use or in development. In this category is included any mechanical or electronic device which does something, or fails to do something because of the action of a student. The devices are presented in terms of categories. The first category is devices intended for the individual under which are included visual devices, audio and visual devices, and audio-visual (motion) devices. The second category is devices for the group under which are included visual devices and audio and visual devices. Many of the devices described are compatible with larger computers. It is hypothesized that greater use of responsive teaching devices might serve as the bridge between present modes of instruction and computer-aided instruction as it is generally foreseen.

Rifkin, Kenneth I., William J. Pieper, John D. Folley, and Horace H. Valverde
Learner Centered Instruction: Volume IV - The Simulated Maintenance Task Environment: A Job Specific Simulator

Technical Report AFHRL-TR-68-14, May, 1969, Air Force Human Resources Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, 45433, 47 p.

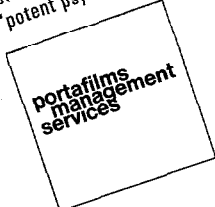
"The purpose of the Simulated Maintenance Task Environment is to provide a means for training and job performance testing of the flight line weapon control systems mechanic/technician for the F-111A aircraft. The SMTE provides practice in flight line equipment checkout, trouble-shooting, and removal and replacement of line replaceable units in the resident training school or in the fields. Also, it is used in conjunction with a performance test designed to measure the technician's ability to perform his job.

"The SMTE provides a high fidelity simulation of those characteristics of the task environment which the technician will encounter in the field while performing his job. It provides a capability for insertion of malfunctions and production of the appropriate out-of-tolerance display or fault indication. Failed units can be located, removed and replaced with performance requirements similar to those in the actual aircraft. The fact that the task has been broken down into part-tasks and that part-task training devices have been developed permits the simultaneous training and testing of several individuals on different aspects of the job. The SMTE has an on-line event recording capability which makes a permanent record of control activations and the sequence of the actions. Because of the simulator's relatively low cost, it may be used frequently by students without incurring high replacement costs in the event of damage to components. It is easily repaired and does not require highly trained personnel to support it."

Ripple, Richard E., Jason Millman, and Marvin Glock
"Learner Characteristics and Instructional Mode"
Journal of Educational Psychology, Vol. 60, No. 2, Apr. 1969, pp. 113-20

In each of 22 schools, pairs of English classes roughly matched on the distribution of mental age scores and sex were employed in a study designed to determine the

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relationship between selected characteristics of students (anxiety, compulsivity, exhibitionism, and convergent-minus-divergent thinking style) and the relative degrees of success they have in learning from programmed versus conventionally structured learning tasks. Separate four-way analyses of variance were carried out for each student characteristic for each of four criterion measures. In all cases, there was a failure to reject the null hypothesis of no interaction between student characteristic and instructional mode on the learning criterion. In addition, neither sex nor intelligence interacted significantly with instructional mode. High anxiety was associated with lower criterion scores.

**Schaeffer, Ruth G.
"Big Brother to the Disadvantaged"**

Conference Board Record, Vol. 6, No. 3, Mar. 1969, pp. 10-15 (Abstracted in *Poverty and Human Resources Abstracts*, Jul.-Aug 1969, p. 120, Reprinted with permission of PHRA editor)

"This article described a program undertaken by the Homasote Company to develop jobs for ten hard-core Negro unemployed. The Homasote program is organized around two important elements: (1) a clear organizational goal - a commitment has been made by top management that Homasote will employ disadvantaged Negroes: and (2) a plan of action for achieving that goal. Homasote has instituted a big brother plan in which present Negro employees help disadvantaged Negroes to adjust to their new work situation on a one to one basis. Four major aspects of the big brothers' role are (1) getting the new employee to the job, (2) orienting him to his work situation, (3) bridging the initial communications gap between the regular foreman and the new employee by serving as the temporary supervisor and (4) serving as a friend and supportive counselor not only during the three-month probationary period but also after the employee has become established on the job. Only one of the Homasote referrals was discharged during the first year."

**Sharp, Sylvia
"A Computer-Assisted Instruction System"**

Audiovisual Instruction, Mar. 1969, pp. 61-64

This article describes the experience of the school district of Philadelphia in using a computer-assisted instruction system for the presentation of subject matter to students. Some of the lessons from the program thus far have been: (1) during the systems operation it is essential that there be a minimum of down-time in a school situation. A minimum of time handling the equipment is necessary, (2) teachers have had to adapt to new roles and new types of problems under the new system, (3) the real power of the computer in education appears to be its ability to monitor the ongoing learning process and to establish patterns of response indicating the cognitive learning style of the student. As a result the concern of the instructor about the needs of the individual is relieved, (4) students are motivated to do work they would normally resist in paper and pencil form, (5) transmitting high information content across telephone lines is a complicated but worthwhile process, and (6) computer-assisted instruction needs to be developed as part of an education process with precisely stated behavioral objectives.

**Tallmadge, G. Kasten, and James W. Shearer
"Relationships Among Learning Styles, Instructional Methods, and the Nature of Learning Experiences"**

Journal of Educational Psychology, Vol. 60, No. 3, May, 1969, pp. 222-30

This study is aimed at determining whether learning might be enhanced by employing instructional methods which differ in design and use as a function of learner characteristics. Two separate subject-matter areas which represent two distinctly different learning situations were selected for investigation. Two separate courses

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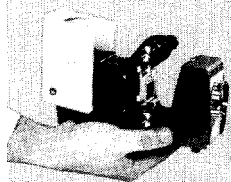
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were developed for each subject matter area. One reflects an inductive instructional approach and the other a deductive method. Each of the four courses was administered to 55-60 Navy enlisted men. Twenty-eight measures of aptitude, interest, and personality were obtained on each subject. The primary finding of the study is the significant interaction among instructional modes, learner characteristics, and subject matters. This finding strongly supports the existence of learning styles.

Tanner, C. Kenneth

"Techniques and Application of Educational Systems Analysis"

Audiovisual Instruction, Mar. 1969, pp. 89-92

The author notes the lack of any systematic or scientific procedure that is generally employed in decisions regarding allocation of instructional funds. The author identifies several techniques of systems analysis and relates how they could be applied to the allocation of resources in education. The first of these is program evaluation. The best known tool under this area is PERT. An advantage of PERT for educational workers is that it forces future event identification in areas such as curriculum planning, research projects, budget preparation, and facilities construction. Another contribution of PERT is that it furnishes administrative personnel with continuous monitoring of project activities or updating. The next technique discussed is linear programming - this technique is said to be particularly applicable in optimally assigning pupils to teachers on the basis of student achievement and personality factors. The final technique discussed is utility-cost sensitivity analysis. This evaluation technique is based on the accepted technique of speculative assignment of value to each activity in the school curriculum. Procedures for development of utility-cost ratio are described and optimal areas of application are detailed.

Tosti, Donald T., and John Ball

"A Behavioral Approach to Instructional Design and Media Selection"

A-V Communications Review, Vol. 17, No. 1, Spring, 1969, pp. 5-28

This paper proposes a new model for instructional system design and develops a system component called a presentation form. Presentation form is designed to be independent of media and content so that media forms may be paired to educational requirements and theories in a rigorous manner. A significant feature of the developmental model proposed is the distinction between medium and presentation form. A presentation design theory leading to the generation of presentation form is described in detail, and six dimensions of the present form are proposed. After presentation forms have been specified and media devices are to be made, media limitations are proposed as the basic selection criteria instead of media advantages.

Valverde, Horace H.

Flight Simulators, A Review of the Research and Development

Technical report AMRL-TR-68-97, July, 1968, Aerospace Medical Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Wright Patterson Air Force Base, Ohio, 45433, 140 p.

"This report presents a general review of the research and development of flight simulators and related areas sponsored by military and other government agencies since 1949. The use of simulators for flight training is emphasized. The report does not consider mathematical models and space flight simulators. The topics include: (1) Visual and Motion Simulation, (2) Transfer of Training, (3) Utilization and Evaluation and (4) Computers. An annotated bibliography of unclassified technical reports reviewed is included for each of the topics. The Defense Documentation Center accession number for each report is provided to facilitate the acquisition of microfilm copies of desired documents by United States military and other government agencies."