



TRAINING RESEARCH ABSTRACTS

Adams, John C.

The Relative Effects of Various Testing Atmospheres on Spontaneous Flexibility - A Factor of Divergent Thinking

The Journal of Creative Behavior, Vol. 2, No. 3, Summer 1968

The purpose of this study was to investigate the relative effects of three testing atmospheres on performance on the spontaneous flexibility tests developed by Guilford as a measure of a factor of divergent thinking. The three testing atmospheres were *competitive*, *noncompetitive*, and *openly receptive*. In general, the results of the study indicate that the environmental atmosphere under which an individual is performing a task has an observable effect on the degree of his divergent thinking. Specifically, the present study supports the assumption that competition tends to hamper spontaneous flexibility, the absence of competition tends to enhance spontaneous flexibility, and that open receptivity on the part of the examiner tends to also enhance spontaneous flexibility.

Bundy, Robert

Computer Assisted Instruction - Where Are We?

Phi Delta Kappa, XLIX, Apr. 1968 (Condensed in the *Education Digest*, Sep. 1968, pp. 424-429)

From an extensive survey of the literature on computer-assisted instruction, the author comes up with fifteen statements which he regards as a reasonable picture of the current state of the art. The author qualifies his remarks in stating that long-term data involving sizable numbers of students have not yet been collected, and that further research is needed in several pedagogical issues related to computer-assisted instruction and on its psychological and sociological effects. Computer-assisted instruction studies are criticized on three grounds: 1) that little effort is usually made to consider other research studies, 2) that there are biases in the selection process, and 3) that there may be maturation or interaction effects. The author states six general conclusions at the end of the article. The conclusions are 1) it is important to distinguish between pedagogical and technical issues in evaluating computer-assisted instruction, 2) computer-assisted instruction offers significant potential for individualized instruction, 3) for some time a critical application of computer-assisted instruction will be a school laboratory to learn about learning, 4) there is a need for funds to finance such programs, 5) research in the field should not be entered upon for reasons of prestige or misguided enthusiasm, and 6) there is a critical need for well designed, well executed long-term research in the area.

Campbell, John P.

Individual vs. Group Problem Solving in an Industrial Sample

Journal of Applied Psychology, 1968, Vol. 52, No. 3, pp. 203-210

A comparison of the quality of solutions to Maier's Change-of-Work-Procedure problem under three experimental conditions - 1) individual solutions, 2) individual solutions after hearing group discussion without criticism, and 3) group solutions after discussion. The subjects were 80 second- and third-level managers from a large Midwestern public utility. Motivational (Bass Orientation Inventory) and biographical correlates of individual and group problem solving behavior were also examined. Group discussion did not improve individual problem solving efforts. Group solutions tended to be of significantly lower quality. There also tended to be a negative correlation between solution quality and orientation toward maintaining group interaction. Implications are discussed.

GERALD H. WHITLOCK
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Derryck, Dennis

Minority Youths Can Be Apprentices

Occupational Outlook Quarterly, Dec. 1967, pp. 7-10 (Obtained from *Poverty and Human Resources Abstracts*, Vol. III, No. 4, 1968, p. 109)

"This article describes an innovative program developed by the Workers Defense League of New York City to increase non-white participation in apprenticeship programs. This pioneering training experiment demonstrates that the economically disadvantaged can gain entry to and success in apprenticeship training. The Joint Apprenticeship Program first tests the applicant. JA then describes various crafts to stimulate the applicant's interest in applying for an apprenticeship at a union office. JA thus helps the applicant fill out union applications. In order to keep the young men in training until they become journeymen, follow-up services are offered, such as indenture-free assistance, interest-free loans for tuition, tools and work clothing, and monthly meetings to discuss job problems and related classroom work. Follow-up contact is later made on an individual basis as problems arise. Statistics are available on JA's placement success. Entry requirements which deter applicants are police records, state residing requirements, high school grade point averages, and a selective process that favors a college preparatory track. JA is performing an important function in disseminating information about apprenticeship opportunities alone."

Eagatz, Glenn E., Wayne R. Otto and Doris M. Cook

"Effect of Three Methods of Instruction Upon the Handwriting Performance of Third and Fourth Graders"

American Educational Research Journal, Vol. 5, No. 1, Jan. 1968, pp. 81-90

"This study was designed to determine the effects of three different instructional approaches--formal group, formal individualized and individualized diagnostic--upon the handwriting samples gathered from 88 third- and 75 fourth-grade pupils and compared on the basis of speed of production and legibility. The individualized diagnostic group, with which no commercial materials were used, produced the most legible handwriting among the third-graders, but the fourth-grade group that received formal group instruction produced the most legible handwriting. There were no differences in writing speed. The suggestion was that perhaps maximum benefits are derived from individualized handwriting instruction only if it is provided early in the sequence of cursive writing skill development."

Fiedler, Fred

The Effect of Cultural Training on Leadership, Organizational Performance and Adjustment

Illinois University, Urbana, Department of Psychology, 1968, 13 p. (Obtained from *U. S. Government Research and Development Abstracts*, Vol. 68, No. 16, p. 8125, Clearinghouse for Federal Scientific and Technical Information)

"Training and preparation are required in order to work successfully in another culture. A number of such training programs have been developed for such purpose. Some of them, like Foreign Service or Peace Corps training, require several months; others, such as those in business organizations, involve orientation courses lasting several weeks. There is, however, a need for the type of orientation which can be compressed into the space of a few hours. The need for such a program is particularly acute for the officer who suddenly finds himself en route to a foreign assignment, or for the government official and business executive who simply cannot spare the months or weeks to prepare himself for each and every culture for which he must perform effectively. An attempt was made to develop a culture training program which would provide the individual some familiarity with the host culture within the space of hours, if necessary in the plane to his destination."

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Gerard, Ralph W.

Shaping the Mind - Computers in Education

Journal of Educational Sciences, Vol. 2, No. 2, Feb. 1968, pp. 119-122

Gerard's essay concerns the technology of human behavior and is many-faceted and penetrating. Computer-assisted learning, according to Gerard, shows faster learning, higher mastery, better retention, and greater satisfaction than with conventional methods. Learning, correcting, and recording processes are also individualized. Small, flexible curricular units permit eventual elimination of standardized classrooms; and the treatment of the community as a total information system with a variety of formal and informal learning and teaching, with computer-aided research, administration, and documentation.

La Gaipa, John J.

"Programmed Instruction, Teacher Ability, and Subject Matter Difficulty"

The Journal of Psychology, Vol. 68, Mar. 1968, pp. 257-260

"Good and poor teachers taught both the easy and difficult units of Basic Electricity by programmed and conventional instruction. Overall, programmed instruction was more effective than conventional instruction. However, programmed instruction led to differentially higher achievement when the teachers were poor and the subject matter was difficult. The results of this study suggest that, in order to make useful generalizations, comparative studies need to consider the quality of instruction and subject matter characteristics."

Longo, Alexander A. and G. Douglas Mayo

"An Experiment in Basic Airborne Electronics Training. Part III Effect of Reduction in Previous Training Upon Ability to Learn Operational Equipment"

The U. S. Government Research and Development Reports, Vol. 67, No. 20, 1967, p. 16 (Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151)

"A longitudinal study was made pertaining to whether training time can be reduced in basic airborne radar technician training through judicious revision of the course. The study compared the relative performance of two matched groups of 29 men each on the basis of their ability to learn a representative item of operational equipment for which the Aviation Electronics Technician (Radar and Radar Navigation System) is responsible. The results indicated that, despite the reduction of the original course from 30 weeks to 22 weeks, graduates of the revised course achieved the objectives of the representative equipment course as well as did graduates of the longer course. Based upon this information in conjunction with the information provided by the two previous reports and certain logical considerations, basic airborne radar technician training was reduced from 30 weeks to 25 weeks."

Maehr, Martin

The Application of Reinforcement Theory to Education

School and Society, XCVI, Feb. 17, 1968, pp. 108-110 (Condensed in the *Education Digest*, Sep. 1968)

A somewhat wary eye is cast on the supposed benefits of Skinnerian principles applied to education as espoused by its more enthusiastic protagonists. The author's main line of attack is that Skinner and his associates have limited the applicability of their approach because they have not dealt with or provided answers to several important questions related to the reinforcement theory in education, especially in the area of motivation.

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By not becoming subjective and not being interested in the students' perception of the situation, researchers are said to overlook the fact that reinforcement is filtered through the perceptions and cognitions effects. Another issue said not to be adequately dealt with is that of predicting what will be reinforcing over a wide variety of situations. Only limited information is said to be provided to predict what "being right" would be in a given situation. The need for general principles in defining reinforcement is emphasized. It is suggested that definitions of reinforcement be in terms of one or another theory of self regard because of the centrality of the individual's frame of reference in any learning situation. Protagonists of reinforcement theory are also criticized for not adequately taking into consideration the possibility of satiation with repeated reinforcement on individuals with different achievement needs.

Marshall, R., and V. M. Briggs

"Negro Participation in Apprenticeship Programs"

Journal of Human Resources Vol. 2, No. 1, Winter 1967, pp. 51-69 (taken from *CIRF abstracts*, 2/B 15155, Vol. 6, Aug. 1967)

A number of developments during the 1950's and 1960's focused attention on efforts to increase the number of Negro participants in apprenticeship programs. One of these was the growing conviction of civil rights leaders that apprenticeship training was a means of overcoming Negro unemployment caused by technological displacement. Another was the virtual absence of Negro journeymen and apprentices in some of the skilled trades.

A survey has been made to identify and evaluate the approaches and methods which have been used to remedy this situation, and to recommend policies. It covered 10 major cities with large Negro populations, and concentrated on programs with very few Negroes.

This article gives the results of that survey in terms of the present situation, its causes and possible remedies.

McClelland, William A.

"Training Research Utilizing Man-Computer Interactions: Promise and Reality"

The U. S. Government Research and Development Reports, Vol. 67, No. 17, 1967, p. 26. (Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151)

"The paper was presented as part of the Avionics Panel Program on Natural and Artificial Logic Processors, sponsored by the Advisory Group for Aeronautical Research and Development, NATO. Several conceptual propositions in regard to man and the computer are offered. The nature of training research is examined. There is also a brief categorization of human behavior to suggest some of the uses and some of the difficulties in the utilization of computers in training research. The role of the training research psychologist dealing with large groups of people in mass instruction in a military setting is discussed, as is the importance of the computer for data processing and as a tool for stimulating complex behavior."

McGuigan, F. J., and Eugene F. MacCaslin

"A Comparison of Whole Versus Part Methods of Marksmanship Training"

The U. S. Government Research and Development Reports, Vol. 67, No. 15, p. 23 (Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151)

"The experiment tested two methods of M1 rifle instruction. One group of Infantry basic trainees was taught by the Army Training Program step-by-step method, another by a whole method. In the first period of whole method rifle instruction,

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the trainee saw a demonstration of the entire sequence of movements entering into the complete act of firing (use of the sling, firing positions, trigger squeeze, etc.). In each subsequent period, he practiced all these movements, including actual firing. The results show in general that the experimental whole method is more effective than the ATP method. On the average: (1) the trainees taught by the whole method made much higher scores for slow fire; they showed a 61% greater improvement over initial slow fire proficiency than did those taught by the ATP method; (2) the more intelligent trainees taught by the whole method made higher scores for sustained fire; and (3) these findings are consistent with further data from a firing test given nearly two months later, indicating that the superiority of the whole method lasts over a long period of time."

Mercer, William

Meaningful Job Development and Training of the Hardcore by Business and Industry

Presented at the Race Relations and Industry 1968 Seminar, New York City, February 16, 1968, p. 11 (Obtained from *Poverty and Human Resources Abstracts*, Vol. III, No. 4, 1968)

The author's remarks are based on his experiences as coordinator of the Business and Industry Coordinating Council of Newark, New Jersey. The organization has just completed an Experiment and Development manpower project, project SEEP (Skill Escalation and Employment Development).

A meaningful job development and training program for the hard-core unemployed requires two things: 1) companies must set up short-term pre-vocational, pre-hiring programs to enable the hardcore unemployed to pass entrance requirements, and 2) community people must be utilized to help in ghetto recruitment.

In training the hardcore, counseling of a personal and vocational nature is necessary. Inspiration must be part of the training program. Problems that may be encountered are 1) transportation may have to be provided from the plant to a conveniently located central point, 2) customs such as respect for time are totally unacceptable to ghetto residents, 3) some ghetto people don't want to work, and 4) too much time may be spent between completion of the program, the job interview, and starting on a new job. The business and industrial community must convince the Negro community of its sincerity about equal employment opportunities. Some role models must be produced with which the disadvantaged can identify.

Meredith, Patrick

Educational Media in the Next Decade - A Systematic Educational Analysis

Journal of Educational Sciences, Vol. 2, No. 2, Feb. 1968, pp. 129-136

This paper aims to assess educational needs and possibilities in the next ten years rather than to predict or to estimate probabilities, since the situation is full of indeterminate contingencies. In order to thread a systematic course of argument through a multiplexity of physical, biological, and social considerations, all relevant to educational possibilities, the beginning of each section starts from the end concept of each previous section. The whole argument is founded on a system of educational logic based on an analysis of the functional structure of educational behavior in space and time, but too mathematical to summarize here.

O'Feish, Gabriel D.

Instructional Procedures and Media

Journal of Educational Sciences, Vol. 2, No. 2, Feb. 1968

O'Feish begins his paper with a brief discussion of instructional media potential, and then continues with the topic of multi-media systems. Next he discusses some of the problems involved in developing a science of education, which includes the multi-media systems concept. His speculation regarding our failure to move faster represents one of the more challenging parts of the paper.

Schurdak, John T.

"An Approach to the Use of Computers in the Instructional Process and an Evaluation"

American Education Research Journal, Vol. 4, No. 1, 1967

The purpose of this article was to compare the learning of a FORTRAN course taught by computer, programmed text, or a conventional text.

Three groups of sixteen students were taught by one of the various methods. Since only two computer-controlled typewriters were available, students were instructed in groups of two during two hour sessions. Prior to the instruction, each subject was administered the Henmon-Nelson Test of Mental Ability. Following completion of the course, each subject took a comprehensive achievement test.

Results showed that the mean performance of the computer group was significantly superior to that of the programmed text and textbook groups, which did not differ significantly from each other. It was concluded that the computer can be used to advantage in providing instruction.

Schuster, D. H.

Evaluation of a New Hybrid in Programmed Instruction

Journal of Applied Psychology, Vol. 51, No. 4, Aug. 1962, pp. 309-312

A new format of programmed instruction similar to the branching style of Crowder was developed for the subject matter of electronic test equipment. All of the answers were explained on the page following a question. This hybrid was evaluated and compared with the conventional scrambled format in a field tryout with electronic technicians. There were no significant differences in achievement between the two formats, whether additional participation by the use of preperforated punch cards was considered or not. There was a tremendous opinion difference in favor of the linearized version afterward, regardless of whether the student had actually taken the linearized format or not.

Severin, Werner J.

"Pictures as Relevant Cues in Multi-Channel Communication"

Journalism Quarterly, Vol 44, Spring 1967, pp. 17-22

The purpose of this study was to investigate effectiveness of a multi-channel communication combining an audio message with related pictures. It was predicted that this type of communication would be superior to other forms of communications due to relevant cues being summated across channels.

Subjects for the experiment were 201 junior high school students who were randomly assigned to one of six groups, with each group being given one of six different messages-- an audio message only; a print message only; an audio and print message combined; an audio with related pictures; an audio with unrelated pictures of the same category; and an audio with unrelated pictures of a different category.



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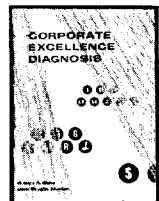
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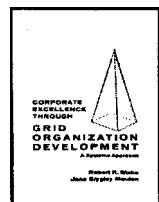
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The messages consisted of a stimulus series of 15 names of nature subjects for which three seconds were allowed for each item. Each subject was then given a check sheet of 40 items on which he was to indicate whether the item had or had not been a part of the stimulus group.

Results confirmed the prediction as the group receiving the communication with the audio and related pictures proved superior in discrimination of the stimulus-series items.

Shoemaker, Harry A.

"The Functional Context Method of Instruction"

The U. S. Government Research and Development Reports, Vol. 67, No. 20, 1967, p. 17. (Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151)

"The paper describes the functional context method of instruction for radio repair training. Although limited to electronics, it is applicable in other types of training. The basic premise of the method is twofold: The context of the material to be learned must be meaningful to the learner and must at the same time be directly relevant to the goals of the training program. A "whole-to-part" training sequence is used rather than the conventional "part-to-whole" method. Within this framework, basic electronics is taught in the broader context of over-all equipment functions and maintenance operations."

Steinmetz, Cloyd S.

Creativity Training. A Testing Program that Became a Sales Training Program

The Journal of Creative Behavior, Vol. 2, No. 3, Summer 1968

Mr. Steinmetz begins the article with a discussion of some of the possible reasons for a lack of creativity in businessmen. He expresses the belief that creativity is not necessarily "automatic", but can be cultivated in an individual through proper training. He then goes on to describe a creativity test (similar to a test developed by Dr. Paul Torrance) which he administered to 500 field salesmen and supervisors. Through administration of this testing program, the author claims that many valuable lessons relating to creativity in salesmanship were learned by the subjects, such as the importance of brainstorming, looking at the problem from different approaches, and asking the right questions. He regards the test administration as a training program in and of itself in that the subjects felt their involvement, discovered the means for creating new ideas, and learned other valuable lessons. The author also claims that the procedure produced definite identifiable changes in the future behavior of the subjects.

Strohmer, Arthur F.

"Labor Relations Training for Foremen: A New Approach"

Personnel Journal, Vol. 47, No. 1, Jan. 1968, pp. 48-49

This article discusses a training program in the area of Labor Contract training, which represents an example of a new and varied approach to the subject.

The training package consists of several training techniques designed to increase the foreman's familiarity and knowledge of the union contract. These techniques are: (1) programmed instruction; (2) case study analysis; (3) role playing; and (4) group discussion and problem solving.

Response to the course from the target population has been very favorable, particularly to the programmed learning sections of the course.

Talmadge, G. K.

"Relationships Between Training Methods and Learner Characteristics"

Journal of Educational Psychology, Vol. 59, No. 1, 1968, pp. 32-36

"The aim of this project was to determine whether training effectiveness could be increased by employing training methods which differed as a function of trainee characteristics. A study was designed involving a control and 2 experimental training methods and 16 measures of trainee aptitudes and interests. The experimental training methods were designed to reflect Gagne's (1965) Type 3 (Chaining) and Type 7 (Principle Learning) theoretical constructs. Large achievement differences resulted from the 3 training methods. No interactions between training methods and learner characteristics were found, however, either with single aptitude measures, with combined measures, or by means of covariance analysis. It was concluded that these negative findings resulted from the existence of interactions between subject matter content and training methods."

Talmadge, G. Kasten, James W. Shearer and Ann M. Greenberg

Study of Training Equipment and Individual Differences, the Effect of Subject Matter Variables

American Institute for Research in the Behavioral Sciences, May 1968, p. 70 (Abstracted in *U. S. Government Research and Development Abstracts*, September 10, 1968, Clearinghouse for Federal Scientific and Technical Information)

"Two separate subject matter areas were selected for investigation which were felt to represent two distinct types of learning situations. Two separate tests were developed for each subject matter area - one reflected an inductive instrumental approach and the other a deductive. Each of the four tests was administered to between 55 and 60 enlisted men. Twenty-eight measures of aptitudes, interests and personality variables were obtained on each subject. Based on correlation coefficients computed between individual difference measures and examination scores, an unweighted means analysis of variance model was used to assess the effects of instructional methods, subject matter areas, and interest levels. The most significant finding produced by this analysis was second-order interaction among all three independent variables. The results of this study strongly support the existence of learning styles and suggest that multi-test instruction based on learning styles might be a most effective way of enhancing learning. It is also suspected that learning styles might be independent of specific aptitude or ability tests."

Turpin, D.

"The 'Quick Response' Approach in Urban Vocational Training"

Phi Delta Kappan, Vol. 48, No. 7, 1967, pp. 342-344
(*CIRF Abstracts*, Vol. 6, 1967, 6/B14997)

The Adult Occupational Training Centre in Los Angeles (California) has introduced a new training scheme (the "quick response" approach) which responds to the community's job needs and provides almost immediate training and instruction for suddenly created job openings in commerce and industry.

The design and content of each course are fitted to the actual hiring needs of employers in the area who, through the employment agencies, inform the centre of their requirements. Sometimes industry, seeking training in a specific skill, will lend the centre equipment to be used in the training process. Advisory committees from industry and unions provide advice on training programs.

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Normally about 20 jobs must be available in a given occupational area before it is considered feasible to establish a course (the centre maintains a list of persons requesting specific courses). Training courses may then be established with from one to five sessions weekly. Courses are designed to last from one week to one year, depending on the need.

Wiener, E. L.

"Transfer of Training from One Monitoring Task to Another"

Ergonomics, Vol. 10, No. 6, 1967, pp. 649-658

"Two experiments were performed to determine whether groups trained on a visual meter-watching task with knowledge of results (KR) would detect more signals than a control group trained without KR in a later session in which a different watchkeeping task was used. The transfer tasks in the two experiments consisted of detecting a brief interruption of (1) a continuously illuminated light, and (2) a pure tone mixed with continuous white noise. The group trained with KR did significantly better ($p < 0.05$) when transferred to the other visual task. Results on the transfer to auditory task were not significant at the 0.05 level, but the combined results of the two experiments were significant at the 0.025 level. No difference was found in commissive errors (false reports) in either experiment."

Williams, Everard M.

"Innovation in Undergraduate Teaching"

Science, Vol. 155, Feb. 24, 1967, pp. 974-979

The purpose of this study was to investigate the effectiveness of a specially prepared programmed text for an introductory college course in electric circuits.

Programmed text materials were used by the experimental group as homework while class time was utilized for student discussion of laboratory experiences. The experimental group was compared with three sections used as a control group and with an honors section. A comprehensive two-hour test was administered at the end of the semester to measure the student's achievement.

Results proved inconclusive as only the upper 25 percent of the experimental group proved superior to the control sections. The scores of most of the experimental students compare about equally with those of the control groups except in the very lowest scoring intervals.

"Human Relations – Training and Research, No. 1: Current Information Sources"

ERIC Clearinghouse on Adult Education, Syracuse, N. Y., Jan. 1968, 17 p.

This publication consists of a set of 33 abstracts processed in recent months by the ERIC Clearinghouse on Adult Education.

These abstracts have been arranged loosely into groupings of research and research reviews, monographs and reports, and journal articles.

"Management Development, No. 1: Current Information Sources"

ERIC Clearinghouse on Adult Education, Syracuse, N. Y., Nov. 1967, 11 p.

This annotated bibliography contains 28 indexed and abstracted entries on management development, including research and evaluation studies, training programs, surveys and bibliographies.