



Annotated Bibliography

Instructional Development in Higher Education

AERA Monograph Series on Curriculum Evaluation. Chicago: Rand McNally & Co., 1967-72.

Under the general editorship of Robert E. Stake, this series presents discussions on the methodology of evaluation, behavioral objectives, research strategies, and observation systems. It provides an excellent introduction to the broad problems that are faced during evaluations.

Alexander, Lawrence T. and Stephen L. Yelon, eds. *Instructional Development Agencies in Higher Education*. East Lansing, Michigan: Michigan State University, 1972.

This paper is the report of the Conference on Instructional Development Agencies in Higher Education. Of particular interest to the developer will be the conference proceedings section which summarizes the discussion on instructional problems and their cause, incentive programs for improving instruction, the development process, and the improvement of teaching. Those who would like to see an instructional development agency in action will find useful the description of such agencies at 15 institutions of higher learning.

Armsey, James W. and Norman C. Dahl. *An Inquiry into the Uses of Instructional Technology*. New York: The Ford Foundation, 1973.

In this brief report by the Ford Foundation, a number of new teaching-learning technologies are examined: television and related techniques, video tape, film, audio tape, radio, computers, programmed instruction, and new kinds of books. The techniques and applications in each area are discussed in detail, and a number

of current and potential uses for instructional technology in higher education are explored. The study also includes an analysis of institutional circumstances which have led to failures in the use of new technologies and recommendations for their future application.



AV Communication Review, Spring 1973, Vol. 21, No. 1.

The entire issue of this journal is devoted to instructional development. Such topics as cost-effectiveness, the management of instruction, learner analysis, task analysis, learning hierarchies and content analysis are dealt with in individual articles. Each of the articles is somewhat focused in nature, dealing in detail with a specific, and often highly technical, area of concern. As such the content covered may be of greater interest to the professional instructional developer or educational technologist than to individuals who are interested in a broader and more general introduction to the topic of academic redesign.

Axelrod, Joseph, *et al.* *Search for Relevance: The Campus in Crisis*. San Francisco: Jossey-Bass Inc., Publishers, 1969.

In a series of scholarly essays, Axelrod and the other contributors to the book inventory the vast array of ills in undergraduate curricula in American higher education. They also propose a series of interesting innovations in curriculum and instruction which they argue will begin to remedy some of these problems. Unfortunately, they do not address themselves sufficiently to the logistic and administrative problems involved in implementing and sustaining instructional innovation. Nevertheless, the reader is likely to find the chapters on *The Failure of Old Models, Four New Models, Influences and Determinants, and Campus Impacts* both interesting and useful.

✓ Baker, Eva L. and Marvin C. Alkin. "Formative Evaluation of Instructional Development." *AV Communication Review*, Winter 1973, Vol. 21, No. 4, 389-418.

This paper is a detailed review of the "state of the art" in the application of formative evaluation to one level of instructional development—instructional product design. A number of formative evaluation models are discussed and the research pertinent to the activity of formative evaluation is described. A final section deals with procedures for conducting formative evaluation through the collection and use of decision-oriented data. On the basis of the limited research available on the topic, one must agree with the implicit conclusion of the authors that, although formative evaluation is moving toward the domain of science, it has yet to fully arrive.

Baker, Robert L. and Richard E. Schutz, eds. *Instructional Product Development*. New York: Van Nostrand Reinhold Co., 1971.



Although this book is unconcerned with the institutional context within which instructional development takes place, it provides valuable help in specifying educational objectives, preparing criterion measures, and developing the actual instructional products. It is a programmed, self-instruction work of seven sequences.

Baker, Robert L. and Richard E. Schutz, eds. *Instructional Product Research*. New York: American Book Co., 1972.

Ideally one would have the services of experienced, expert evaluators to test the efficacy of one's efforts. When this is not the case, a very useful guide to the design and conduct of such product evaluations can be found in the sections on problem formulation and design and data analysis. It is also interesting because it utilizes a rather unusual programmed format for self-instruction which one may wish to consider as a model of instructional product development.

Behrens, Anna Jo. *Higher Education with Fewer Teachers: Some Examples of Current Practice*. Washington, D.C.: Management Division, Academy for Educational Development, Inc., 1972.

Although the objective of Behrens' book—describing ways in which colleges and universities can reduce the number of faculty and function with high student/faculty ratios—is not central to a discussion of improved instructional development in higher education, it does include a wide range of alternative strategies and possible applications which may be helpful to the reader.

Bennis, Warren G., Kenneth D. Benne, and Robert Chin, eds. *The Planning of Change*. New York: Holt, Rinehart and Winston, Inc., 1969.

This is an extensive (627 pages) series of scholarly articles on planning organizational change. While it is not specifically directed toward academic institutions, many of the models for change developed in the volume may be useful to both faculty and administrators concerned with implementing and sustaining instructional innovations. Chapters focusing on Systems in Change, Change Strategies, Resistance to Change, and Current Models of Planned Change may be particularly useful to academic administrators and instructional developers.

Bernabei, Raymond and Sam Leles. *Behavioral Objectives in Curriculum and Evaluation*. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1970.



This short monograph deals entirely with the issue of behavioral objectives. The first section discusses the role of behavioral objectives in the development of curricular programs. The second section focuses on identifying behavioral objectives which are substantive and meaningful. And the third section attempts to integrate the cognitive and affective domains in the writing of behavioral objectives. A brief final section provides a number of exercises in defining and writing objectives in behavioral form. For the reader who is interested in gaining both a theoretical and practical understanding of behavioral objectives, this book may be quite useful.

Bloom, Benjamin S., et al., eds. *A Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co., Inc., 1956.

This now classic work provides a system for classifying the goals of an educational system according to the type of cognitive activities called for—such as remembering and recalling knowledge, thinking, problem solving, creating, etc. In instructional development it can facilitate communication, reveal the emphasis or lack of emphasis on certain behaviors, and suggest means of evaluating student success in achieving the various kinds of cognitive objectives.

Borg, Walter R., et al. *The Minicourse: A Microteaching Approach to Teacher Education*. Beverly Hills, California: Macmillan Educational Services, Inc., 1970.

Using teacher education as an illustration, these Far West Laboratory for Educational Research and Development staff members demonstrate what they call R & D: (1) stating of specific performance objectives for the new product; (2) using available research to identify concepts and materials for incorporation; (3) rigorously evaluating the product in the intended setting; and (4) revising the product based on the evaluation.

Born, David G. *Instructor Manual for Development of a Personalized Instruction Course*. Salt Lake City: Center to Improve Learning and Instruction, University of Utah, 1970.

This is a thorough and comprehensive manual for the development of individualized, self-paced instruction modules and courses. Six aspects of design are discussed: formulating objectives; self-pacing; mastery learning; the role of lectures and demonstrations; the use of tutorials; and the student's responsibility for his own learning. The manual also contains reports from two studies of individualized, self-paced instructional programs which have been implemented as pilot projects.

Bowen, Howard R. and Gordon K. Douglass. *Efficiency in Liberal Education: A Study of Comparative Instructional Cost for Different Ways of Organizing Teaching-Learning in a Liberal Arts College*. New York: McGraw-Hill Book Co., 1971.



Originally a report prepared for the Macalester Foundation and issued by the Carnegie Commission on Higher Education, this volume explores the relative costs of several instructional models, including traditional, self-instruction, large lecture-common general education, tutorial, and eclectic plans. It is particularly valuable in helping one calculate the costs of instruction so that one can make the best instructional decisions within budgetary restraints.

Brick, Michael and Earl J. McGrath. *Innovation in Liberal Arts Colleges*. New York: Teachers College Press, 1969.

This book reports the results of a survey of over 800 colleges and universities offering liberal arts programs. The survey was designed to identify institutions which had introduced innovative instructional practices during the 1960's. While the book does not provide as extensive an analysis as might be wished concerning the degree of impact which these instructional innovations have had, it is, nevertheless, a comprehensive compendium of the ways in which departures from the traditional liberal arts curriculum have been attempted.

Briggs, Leslie J. *Handbook of Procedures for the Design of Instruction*. Pittsburgh: American Institutes for Research, 1970.

This monograph presents a detailed set of procedures or model for the instructional development process. The model outlined is based on a systems approach which entails the specification of instructional objectives; the selection of methods, media, and materials designed to meet the objectives; and the design of assessment instruments which measure the attainment of the objectives. Included in the book is an excellent discussion of the development of course objectives (emphasizing the writing of behavioral objectives) and an extensive analysis of the principles involved in media and materials selection. Briggs' work is an important publication in the field of instructional development if for no other reason than that it prescribes a detailed and explicit systems view of the instructional development process. A major difficulty, one which Briggs himself acknowledges, is that the model may be so detailed and intricate as to preclude its effective application in situations where time and resources are limited.

Briggs, Leslie J. *Sequencing of Instruction in Relation to Hierarchies of Competence*. Pittsburgh: American Institutes for Research, 1968.

This brief monograph is essentially a review of the research literature regarding the sequencing of instruction. Emphasis is placed on the rationale employed in such research studies, as well as the experimental procedures followed, and the results and their apparent implications. Particularly useful to the reader is a discussion of alternate ways of conceptualizing the role of sequencing in instruction. The theoretical positions of Gagne, Bruner, Scandura, Pressey, Skinner, Ausubel, Mager, and Campbell are briefly outlined.

Briggs, Leslie J., et al. *Instructional Media: A Procedure for the Design of Multi-Media Instruction: A Critical Review of Research, and Suggestions for Future Research*. Pittsburgh: American Institutes for Research, 1967.

This monograph attempts to develop a six-step analytic procedure for the selection of media in instructional development. The procedure involves a methodology for matching media with educational objectives. The chapters entitled "A Procedure for Choosing Media for Instruction" and "Selective Review of Literature on Audiovisual Media of Instruction" are both well written and should provide useful information and ideas for the developer. The book also includes an extensive bibliography focusing on books, instructional materials and experimental studies in media application.

Carnegie Commission on Higher Education. *Continuity-Discontinuity: Higher Education and the Schools*. New York: McGraw-Hill Book Company, 1971.

A continuing, though perhaps implicit, theme of Carnegie Commission reports is that education has placed many "artificial" constraints on its own form and content. This report is no exception. In it the commission critically analyzes the disarticulation between secondary and post-secondary education against a backdrop of universal access to higher education and increasingly diverse student populations. Essentially three discontinuities are addressed by the report: those between institutional and student interests in the college admission process; those in the curricular interface between high school and college; and those in the political and financial relationships between high school and college. Of particular relevance to the instructional development enterprise are those sections of the report which deal with the unnecessary curricular duplication between the last year of high school and the first two years of college. The commission concludes that it is both desirable and possible to effect greater continuity in student time and effort in the transition from secondary to post-secondary education and offers a number of salient recommendations in this regard.

Carnegie Commission on Higher Education. *Less Time, More Options: Education Beyond the High School*. New York: McGraw-Hill Book Company, 1971.



Although this Carnegie Commission Report does not deal directly with instructional development or evaluation, it nevertheless outlines the context in which such enterprises may take place in the future. The title *Less Time, More Options* succinctly states the two main positions put forth. The Commission proposes that more efficient use can be made of the time spent in college by increasing instructional effectiveness and making better use of space and instructional resources. It also suggests that students be afforded more flexibility through options in time, course content, and paths leading to a degree. As such the Report touches on some rather important implications for the role of instructional development and evaluation. For example, how might instructional developers and evaluators contribute to the design and evaluation of external degree programs, provisions for experience credit, and the implementation of continuing education programs?

Carpenter, Margaret, B. and Sue A. Haggart. *Cost-Effectiveness Analysis for Educational Planning*. Santa Monica, Calif.: The Rand Corporation, 1970.

While based on the debatable assumption that the primary objective of cost-effectiveness analysis is to facilitate choice among alternative educational programs, Carpenter and Haggart's short paper is particularly useful in that it points out a number of the common misuses of the cost-effectiveness technique. Much of the misuse in cost-effectiveness analysis they warn, stems from its seductive power, "for it gives superficially simple, quantitative answers to highly complex problems." Additionally they analyze the weaknesses inherent in a single measure criterion of cost-effectiveness and suggest a model based on "equal-cost alternatives." In this model the dimensions of each program (such as students enrolled) are adjusted so that they will incur approximately the same costs over some specified period of time. By means of such an approach, they argue, educational planners will be freed from having to consider cost alone and can concentrate on the more difficult to assess factors of effectiveness such as value added, attitudinal and resource usage requirements.

Center for Improvement of Undergraduate Education (Cornell University) and *Change Magazine*. *The Yellow Pages of Undergraduate Innovations*. New Rochelle, New York: Change Publications, 1974.

Undoubtedly there is a vast array of innovative efforts currently underway in American higher education. Because there is frequently little communication between institutions, or even between departments in the same institution, however, these innovations are seldom shared or disseminated. This "guide" to undergraduate innovations is a significant attempt to remedy this situation. *The Yellow Pages* is a nationwide directory of approximately 3000 innovative programs categorized into instruction, curriculum, and institutionally based



efforts. (Two-year community colleges and graduate and professional schools are excluded.) The guide is extremely well organized and easy to use. Each entry contains a content code, title and/or short description, name and address of the institution, and the name and phone number of the person responsible for the program. Also included is a partial listing of change agencies in higher education. Although no attempt is made to abstract the basic elements or concepts underlying each innovation, the listing should be useful to faculty, administrators, and instructional developers who are interested in finding out how others have attempted to improve the process of instruction.

Centra, John A. *Strategies for Improving College Teaching*. Washington, D.C.: ERIC Clearinghouse on Higher Education and the American Association for Higher Education, 1972.

This short monograph is a useful source of interesting ideas and information on the ways in which college teaching can be improved. Centra develops a teaching-learning paradigm, the elements of which provide a framework for analyzing methods of instructional evaluation. A number of these methods are discussed within the context of how they may improve teaching. A short section on the ways in which technology can improve teaching may be of particular interest to the developer.

Chickering, Arthur W. *Education and Identity*. San Francisco: Jossey-Bass Inc., Publishers, 1969.

Chickering's book is an attempt to synthesize the vast body of research on the college student into a coherent model of personal development during college. Having developed this generic model, Chickering then discusses the institutional conditions for impact in chapters on The Clarity and Consistency of Objectives, Institutional Size; Curriculum, Teaching, and Evaluation; Roles of Faculty and Administrators; and The Role of Student Peer Culture. He argues quite convincingly that if academic instruction is to have any significant and lasting impact on student development it must be based on developmental as well as cognitive or content mastery goals. An extensive bibliography of research studies on the impact of college is included.

Committee on the Student in Higher Education. *The Student in Higher Education*. New Haven, Connecticut: The Hazen Foundation, 1968.

This brief paperback report maintains that a major problem in contemporary colleges and universities is the fact that instruction tends to ignore the developmental needs of students. Thus, curriculum and instructional reform, although widely



attempted, have generally met with little success because they are essentially discipline- or content- rather than student-centered. The report discusses a number of reforms which will make instruction more oriented to individual student needs, and presents an interesting institutional model which it calls the "liberal-developmental" college.

Crane, Peter and Clark C. Abt. "A Model for Curriculum Evaluation." *Educational Technology*, 1969, 9, 17-25.

One of the most frustrating situations faced in any attempt to determine the worth or cost-effectiveness of an educational curriculum or program is the narrowness with which many evaluation and cost-effectiveness models have been conceived. All too often a single criterion is employed where multiple criteria are needed. The authors of this paper address this issue by outlining a model which considers curriculum evaluation in relation to four categories: coverage, appropriateness, motivational effect, and cost. The importance of multiple criteria and more broadly conceived plans for evaluation and cost-effectiveness are stressed.

Cross, K. Patricia. *Beyond the Open Door: New Students to Higher Education*. San Francisco: Jossey-Bass Inc., Publishers, 1971.

The central thesis of this book is that new admissions policies have opened the door to new and different kinds of students, and that institutions of higher education are not prepared to educate them effectively. The bulk of the text is devoted to a research description of these "new students" with an emphasis on how their aspirations, attitudes, values, personality, characteristics, and expectations of post-secondary education differ from those which both faculty and administrators have come to expect from students. In the final chapter, Cross presents a number of recommendations for instructional changes which may provide a useful point of departure for developers.

Dressel, Paul L. *College and University Curriculum*. Second Edition. Berkeley, Calif.: McCutchan Publishing Company, 1971.

Dressel argues that the general failure of undergraduate curricula to have a significant impact on students is due to the fact that most academic programs are composed of discrete and non-integrated instructional events. "Effective and even inspired instruction in isolated courses," he maintains, "does not comprise a significant educational experience." Dressel's work is penetrating and deserves reading if for no other reason than that it asks a fundamental question about the viability of instructional development. Will development efforts which are limited to course redesign further the growth of integrated and well-conceived undergraduate programs?

Dressel, Paul L. and Sally B. Pratt. *Educational Development at Michigan State University*. Office of the Educational Development Program, Michigan State University, Spring 1973.



This report outlines the efforts of the Educational Development Program, which is essentially an instructional development agency, at Michigan State University. The function, organization, and operation of the program are discussed, and a detailed analysis and description of each of its projects are presented. The last section of the report outlines and analyzes two rather innovative instructional models. The first emphasizes the role of media in independent study, while the second is based on the mastery-learning concept. The administrator, faculty member, or instructional developer who is interested in finding out how different development agencies function is likely to find this report quite useful.

Dressel, Paul L. and Sally B. Pratt. *The World of Higher Education: An Annotated Guide to the Major Literature*. San Francisco: Jossey-Bass Inc., Publishers, 1971.

Dressel and Pratt have provided a selective annotated bibliography that covers the major areas of concern in higher education. The reader should find useful the sections on planning, organization and staffing, innovation, evaluation, resource allocation, space utilization, and faculty work load.

Eisner, Elliot W. "Emerging Models for Educational Evaluation." *School Review*, August 1972, 573-589.

In this excellent article, Eisner argues for the need to broaden our consideration of legitimate educational objectives. He proposes the term "expressive objectives" to simplify a concern with instructional outcomes that are idiosyncratic for the learner and which take into account the unintended impacts of the learning experience. Such objectives, he maintains, may be central in conceptualizing and understanding what happens to the learner beyond and apart from the mastery of content.

Evans, Richard I. *Resistance to Innovation in Higher Education: A Social Psychological Exploration Focused on Television and the Establishment*. San Francisco: Jossey-Bass Inc., Publishers, 1967.

This book analyzes a number of case studies of institutions which have attempted to implement technological innovations in instruction, e.g., teaching machines and instructional television. Although the analysis is highly social-psychological in nature, it nevertheless presents a number of practical recom-



recommendations on dealing with the sources of resistance to change in instructional methods. While the book focuses on resistance to technological innovations, many of its conclusions and recommendations may be quite appropriate for other instructional development contexts. Of particular interest to the instructional developer are chapters on Sources of Resistance, Theories of Innovation, Professors and Instructional Television, and Changes in Attitude Toward Innovation.

Feldman, Kenneth A. *Research Strategies in Studying College Impact*. Iowa City, Iowa: American College Testing Program, 1970.

Clearly the impact of college on students is attributable to factors beyond the academic program alone, e.g., college social structure, peer group influence, student input characteristics and institutional climate. The importance of these latter components to the process of instructional development is that they may significantly mediate the impact of instruction itself. This brief monograph presents a critical overview of research on the impact of college on students and discusses the various strategies by which the unique contributions of particular variables might be identified. Although it is not intended as a comprehensive analysis of different research strategies, it may provide the evaluator with a useful point of departure for developing ways to identify the contribution of instruction to total college impact.

Feldman, Kenneth A., ed. *College and Student: Selected Readings in the Social Psychology of Higher Education*. New York: Pergamon Press, Inc., 1972.

This is an excellent source book of 32 scholarly articles focusing on the social-psychological processes of higher education. The articles are organized into seven major sections and deal with such topics as the transition from high school to college, the influence of the college environment, the relationship between student culture and faculty values, and change and stability during college. The final section presents a number of recommendations and analyzes two curricular innovations. An outstanding bibliography is included for each section of the volume.

Feldman, Kenneth A. and Theodore M. Newcomb. *The Impact of College on Students—Volume I: An Analysis of Four Decades of Research*. San Francisco: Jossey-Bass Inc., Publishers, 1969.

In a prodigious and superbly organized effort, Feldman and Newcomb have reviewed nearly 1500 articles focusing on the impact of college on a vast number of student development variables. In addition to providing an excellent reference

source, *The Impact of College on Students*, also contains a penetrating analysis of the institutional determinants of student growth and change. The weight of evidence presented suggests that neither faculty nor the traditional academic program have had substantial impact in many areas. The chapters on "Student Culture and Faculty" and "Background, Personality, and College Impacts" may provide useful information for instructional developers. The final chapter provides an excellent integrative summary and puts forth a series of interesting recommendations at the institutional level.

Freedman, Mervin, ed. *New Directions for Higher Education: Facilitating Faculty Development*. San Francisco: Jossey-Bass Inc., Publishers, No. 5, Spring 1973.

The first issue of a quarterly source book focusing on the concerns of higher education, this volume contains a series of scholarly articles by such authors as Nevitt Sanford, Joseph Axelrod, Michael Bloom, and Mervin Freedman. The major themes presented touching on the concerns of instructional development are a discussion of new faculty roles in teaching and the use of faculty involved in innovative instructional practices as the nucleus of a faculty orientation and development program.

Gagne, Robert M. and Leslie J. Briggs. *Principles of Instructional Design*. New York: Holt, Rinehart and Winston, Inc., 1974.

Although not specifically addressed to the context of higher education, this extremely well-written book outlines a generic system for designing instruction which may have a wide-ranging utility. The basic working assumption is that the "design of instruction should be undertaken with suitable attention to the conditions under which learning occurs." From this stance the authors present a series of rationale steps which, they assert, constitute a system of instructional design. The scope of this system essentially relates to Phase II of the process outlined in Chapter III of this book. The steps in the system are outlined briefly as follows:

1. Specifying kinds of capabilities to be learned—intellectual skills, cognitive strategies, information attitudes, or motor skills.
2. Defining the planned outcomes or objectives of instruction. Here the stress is on behavioral objectives.
3. Describing the conditions of learning necessary to bring about the learning desired.
4. Developing sequences of instruction by taking into account prerequisites, remediation, and exemption.
5. Developing individual lessons or instructional events.
6. Devising a set of procedures for assessing outcomes of instruction. This also includes a feedback system for formative evaluation.



Remaining chapters of the book outline each step of the instructional design system in considerable detail.

Gould, Samuel B. and K. Patricia Cross. *Explorations in Non-Traditional Study*. San Francisco: Jossey-Bass Inc., Publishers, 1972.

Non-traditional study—"the vast array of organized learning activities that occur outside of conventional educational offerings"—is discussed in this volume in four scholarly essays. The book examines the concepts behind non-traditional study, describes the need for such programs, examines the ways in which non-traditional study can be rewarded with meaningful credits and respected degrees, and outlines implemented and proposed models. A cogent and compelling argument for greater flexibility in awarding credit for various academic experiences, it also presents a significant challenge to instructional developers. What role will instructional development play in the creation and implementation of non-traditional programs?

Grayson, Lawrence P. "Costs, Benefits, Effectiveness: Challenge to Educational Technology." *Science*, March 17, 1972.

Grayson discusses the problems of analyzing costs, benefits, and effectiveness in education and the challenge posed to educational technology thereby. Included are sources of funding for educational technology, prescriptions for change, and a lengthy bibliography.

Grontlund, Norman E., ed. *Readings in Measurement and Evaluation*. New York: The Macmillan Company, 1968.

This book presents an extensive compilation of 48 scholarly articles covering such topics as the measurement and evaluation process, interpreting test scores, validity and reliability, standardized tests, and interpreting test data. Of particular relevance to instructional development and evaluation are the chapters entitled "Measurement and Evaluation of Instructional Objectives," "Taxonomy of Educational Objectives—Use of the Cognitive and Affective Domains," "Evaluation for Course Improvement," and "Curriculum Evaluation: The Why of the Outcomes."

Haney, John B., Phil C. Lange, and John Barson. "The Heuristic Dimension of Instructional Development." *AV Communication Review*, 1968, 16, 4, 358-71.

In the aftermath of a project in which a hypothetical model for instructional development was applied at four colleges, the authors of this paper attempt to

delineate what happened that may be of practical importance to the instructional developer. These they refer to as the heuristics of instructional development—strategies and tactics which make the model work successfully. While heuristic approaches are not always academically respectable, in the sense that they are difficult to state as empirically testable hypotheses, the 18 heuristics presented in this article provide a useful set of practical guidelines for the instructional developer in such areas as establishing faculty relationships, dealing with objectives, the relative importance of course content, and providing for faculty rewards.

Harmon, Paul. "Curriculum Cost-Effectiveness Evaluation." *Audiovisual Instruction*, January 1970, 24 ff.

Harmon's article might be of interest to the instructional developer, evaluator, or administrator if only because it presents a model for cost-effectiveness analysis in instruction based almost totally on behavioral objectives. By placing so much emphasis on behavioral factors in developing a cost-effectiveness index at the course level, Harmon's model may substantially oversimplify the complexity of variables involved in judging any educational experience more, or less, cost-effective. Since it analyzes a number of case studies against the model proposed, however, it provides a useful introduction to at least one approach to the cost-effectiveness enterprise at an elementary and easily understood level.

Harvey, James. *Reforming Undergraduate Curriculum: Problems and Proposals*. Washington: ERIC Clearinghouse on Higher Education, 1971.

Harvey has written a brief, but quite comprehensive monograph on the "favorite indoor sport" of faculty members and administrators—reforming the curriculum. In it he presents a review of many of the practical difficulties involved in bringing about instructional reform, as well as an outline of current proposals and actual experimental curricula in operation on a number of campuses. The major points made are (1) that instructional and curricular development efforts will have little impact unless both faculty and administrators can come to some consensus about the purposes of undergraduate education and (2) that administrative and support services must be taken into account as part of the change process. An extensive annotated bibliography covering Curricular Studies, Considerations in Curricular Reform, Institutional Case Studies in Instructional Reform and Development, and Proposals for Reforming Curricula is included.

Havelock, Ronald G. *The Change Agent's Guide to Innovation in Education*. Englewood Cliffs, New Jersey: Educational Technology Publications, 1973.

This is a useful source of practical "how to do it" information in the

fostering of change in education. While the emphasis is on bringing about change in the secondary school rather than in higher education, the author outlines a generic model for the process of planned change which is probably quite generalizable to a number of different educational contexts. The first section of the book briefly outlines the author's model for the change agent as a "process helper," which consists of six stages:

1. Building the client-change agent relationship
2. Diagnosing the problem
3. Acquiring relevant resources
4. Choosing the solution
5. Gaining acceptance for the solution
6. Stabilizing the innovation and generating self-renewal

Subsequent sections consist of a series of case studies and a detailed analysis of each stage of the change process utilizing examples from the case studies as well as relevant change literature. Of particular interest to the instructional developer are the detailed analysis of stages 1, 5, and 6 in the change model. The book also includes supplementary sections which contain an outline of innovation strategies, a listing of information sources, and an excellent annotated bibliography.

Hefferlin, J.B. Lon. *Dynamics of Academic Reform*. San Francisco: Jossey-Bass Inc., Publishers, 1969.

Hefferlin's book is an outstanding analysis of what elements comprise an institutional environment conducive to instructional change and innovation. Hefferlin studied a national sample of 110 institutions in an attempt to "ferret out" the institutional determinants of dynamism. His findings strongly suggest that the correlates of dynamism have little to do with high standards or so called "academic excellence." Moreover, on the basis of the evidence, he argues quite convincingly that many of the determinants of change are the result of purposeful administrative strategies and decisions. The book is extremely well written and in addition to the text contains an extensive annotated bibliography of the literature of "Change Processes" in higher education.

Hefferlin, J.B. Lon, Melvin Bloom, Jerry G. Gaff, and Brenda J. Longacre. *Inventory of Current Research on Postsecondary Education*. Berkeley: Center for Research and Development in Higher Education, 1972.

This book contains annotated references for over 1100 research projects currently underway or recently completed in the United States and Canada in the area of post-secondary education. While not directly concerned with instructional development, the volume nevertheless provides a useful source of reference by which the instructional developer can update his or her knowledge in such areas as research on the college student; case studies in experimental programs; and the evaluation of instructional innovations.

Holsclaw, James E. *The Development of Procedural Guidelines for the Systematic Design of Instruction Within Higher Education*. Unpublished Doctoral Dissertation, University of Southern California, 1974.

The significance of this dissertation lies not so much in the new ground it uncovers, as in its comprehensive synthesis of the state of the art of instructional development models and practice. In addition to an extensive review of the literature pertaining to the systematic design of instruction, the study contains an in-depth analysis of the practical procedures and guidelines being used by instructional developers at 13 instructional development agencies in the U.S. The working guidelines obtained from the literature review and survey of practicing instructional developers are subsequently abstracted in a list of some 141 "heuristics" for carrying out instructional redesign in higher education. These "heuristics" address such topics as needs assessment, specifying objectives, the use of media, evaluation, and general operating procedures. Since heuristics are usually derived empirically, e.g., from experiencing what has or has not worked effectively in a particular endeavor, the list developed in this study may be particularly useful to the practicing instructional developer.

Johnson, Stuart R. and Rita B. Johnson. *Developing Individualized Instructional Material*. Palo Alto, California: Westinghouse Learning Press, 1970.

This brief self-instructional text is a neat introduction to the task of specifying and analyzing objectives, measuring activities, and designing and refining institutional systems. Although one should not expect depth in such a few pages, it does provide a good overview of the institutional development process and, by its format, of one product of the process.

Kaufman, Roger A. "Accountability, a System Approach and the Quantitative Improvement of Education—An Attempted Integration." *Educational Technology*, January 1971, 21-25.

Kaufman's excellent article takes the existing tools of accountability, e.g., Systems Analysis, Needs Assessment, Behavioral Objectives, PPBS (Planning, Programming, Budgeting Systems) and PERT (Program Evaluation Review Technique) and attempts to integrate them into a model for the "measurable improvement of education." The generic "educational process model" proposed comprises six steps for problem solving:

1. Identify problem from needs
2. Determine solution requirements and alternatives
3. Select solution strategies and tools
4. Implement
5. Determine performance effectiveness
6. Revise as required



Kaufman then briefly discusses the tools for accountability and relates them to steps in his proposed model. In reading this article one might attempt to assess the feasibility of Kaufman's model as a practical model for the instructional development process. The parallels between his model and the model presented in this manuscript are striking.

Kaufman, Roger A. *Educational System Planning*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.

If considered as an outline of what goes into planning an education system to meet identified needs, this is a very helpful book. Unfortunately, it is little more than an outline as the author tries to cover the universe in only 161 pages. It should be valuable in directing the reader to more specific and thorough treatments of most topics relevant to institutional development. Excellent bibliography.

Keller, Fred S. "Good-bye, Teacher. . .," *Journal of Applied Behavioral Analysis*, 1968, 1, 79-89.

This article presents the essential features of the "Keller Plan," an instructional approach which features self-pacing, mastery learning, and extensive student-faculty interaction on an individualized basis. The author briefly outlines the development of the self-pacing approach and illustrates the method by sampling the activities of a hypothetical student as he moves through the course. The underlying rationale for mastery learning and self-pacing is briefly discussed, and the operation of the tutorials, testing procedures, and grading systems is described. A final section makes several comparisons with the Postlethwait approach. While the space limitations of a journal have probably prevented Keller from making a detailed analysis of the logistical and administrative considerations which often arise when self-paced instruction is implemented, this reference may be quite useful to those seeking a broad understanding of the philosophical and pedagogical foundations of the "Keller Plan."

Knapp, Patricia B. *The Academic Library Response to New Directions in Undergraduate Education*. Minneapolis: Review Series Number 2, ERIC Clearinghouse for Library and Information Sciences, 1970.

The success of many instructional development enterprises depends on the extent to which such supportive facilities as the academic library respond to new demands and changed usage patterns. This short (25-page) review discusses library changes and innovations in undergraduate curricula. There is a detailed discussion of the uses and misuses of learning resources centers.

Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia. *Taxonomy of Educational Objectives, Handbook II: Affective Domain*. New York: David McKay, 1964.



Like Handbook I on the cognitive domain (see Bloom, Benjamin S., et al. above), this book is concerned with the choice of content and behavior which forms the structure of the planned curriculum and which provides a basis for evaluating the success of instructional programs. The various types of human reactions to instruction, variously described as interests, attitudes, appreciations, values, and emotional biases, are classified in such a way that one can use the system to generate or classify affective objectives. The book is very useful in defining what behavior will count as the intended response and in revealing emphasis—or the lack thereof—on the student's affective response to instruction and its content.

Levien, Roger E. *The Emerging Technology: Instructional Uses of the Computer in Higher Education*. A Carnegie Commission on Higher Education and Rand Corporation Study. New York: McGraw-Hill Book Co., 1972.

This work is a comprehensive look at what the computer can do in institutions, what it will cost, how it can best be utilized, and what problems among administrators, faculty, and students one can expect from computerized instruction.

McGrath, Earl J., ed. *Prospect for Renewal: The Future of the Liberal Arts College*. San Francisco: Jossey-Bass Inc., Publishers, 1972.

The basic theme of this collection of nine scholarly essays by such authors as Arthur Chickering, Morris Keeton, and Nevitt Sanford is that liberal education is in a state of crisis. The question is not merely in what form liberal education will exist in the future, but whether it will exist at all. The essays discuss the role of technology and systems planning in liberal education as well as outlining a number of alternative liberal education models. Of particular relevance to instructional change are the chapters entitled "Social Change, Human Development and Higher Education"; "Alternative Pathways to Liberal Education"; and "Learning Environments."

McKeefery, William J. *Parameters of Learning: Perspectives in Higher Education Today*. Carbondale, Ill.: Southern Illinois University Press, 1970.

McKeefery's book proposes a frame of reference by which the various learning experiences in higher education can be integrated into an instructional gestalt. The framework he proposes is essentially a systems view of instruction.

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The total learning experience is divided into seven subsystems: the complement of persons, the space configuration, the process, time relationships, inputs to the learning situation, interaction in the learning setting, and outputs of the learning situation. A cogent argument is made that instructional development efforts must take all of these subsystems into account when planning for change.

Mager, Robert F. *Preparing Instructional Objectives*. Palo Alto, Calif., Fearon Publishers, 1962.

For the individual who wants to learn the fundamental elements of behavioral objectives and at the same time obtain practice in writing them, this little programmed instruction booklet is an excellent place to start. The reader is introduced with a minimum of jargon to three basic concepts underlying behavioral objectives:

- (1) specifying the kinds of behavior acceptable as evidence that the objective has been achieved;
- (2) describing the conditions under which the behavior will be expected to occur; and
- (3) specifying the criteria of acceptable behavior.

Subsequent sections present the reader with a series of useful problems in the application of these three concepts. The examples used are at a simple level, so there may be some difficulty in extending the material to more complex objectives.

A more basic criticism of Mager's work is that it deals only with the preparation of behavioral objectives. It does not address the issue of their appropriateness or inappropriateness to different kinds of learning situations or instructional intents. This issue is particularly significant to instructional development in higher education since a substantial number of faculty regard behavioral objectives as seriously restricting the outcomes of intellectual inquiry and development.

Mager, Robert A. and Peter Pipe. *Analyzing Performance Problems or "You Really Oughta Wanna."* Belmont, California: Fearon Publishers, 1970.

This brief but excellent book explores the problems which arise because someone is not doing what we would like him to do and offers a diagnostic system for identifying those factors which are interfering with student performance.

Mayhew, Lewis B. and Patrick J. Ford. *Changing the Curriculum*. San Francisco: Jossey-Bass Inc., Publishers, 1971.

Mayhew and Ford focus on the role of the administrator in facilitating instructional and curricular development. Their basic thesis is that if admin-

istrators do not plan comprehensively for instructional change by taking into account such variables as providing a means for rewarding faculty and developing responsive administrative support systems, innovations are likely to be patchwork in form and short in duration. The authors discuss a number of strategies which both administrators and faculty might use to initiate and sustain instructional development. They also briefly discuss the role of instructional development agencies in developing a climate for system-wide innovation.

Miller, Richard I. *Evaluating Faculty Performance*. San Francisco: Jossey-Bass, Inc., Publishers, 1972.

A fundamental theme of this book is that if faculty and administrators cannot successfully resolve the issue of evaluating faculty performance, it is quite likely to be undertaken by outside agencies. Within this context, Miller outlines a model for the overall evaluation of faculty performance which takes into account nine areas of evaluation. He maintains that by selecting from appropriate areas, the evaluation needs of different kinds of institutions can be met. The model is designed to be quite practical. Sample evaluation forms and a point-by-point procedure for its implementation in a number of different institutional contexts are presented. An extensive annotated bibliography on faculty evaluation is also included.

Milton, Ohmer. *Teaching or Learning?* Washington: Research Report Number 6, American Association for Higher Education, May 1, 1971.

This brief monograph describes and integrates much of the research about traditional teaching approaches and concludes that there is no measurable difference among truly distinctive methods of college instruction when evaluated against the criterion of student performance on final examinations. In the words of the author, "prescriptions for how to teach effectively are about as outdated as leeching." On the basis of this review of the research, Milton suggests that greater emphasis in research and instructional development be placed on understanding both the learning process and the expectations, needs, and individual learning styles of the learner. He further suggests a number of broader and less traditional roles for the faculty member in the instructional process. These new roles focus on facilitating student learning by developing instructional events which allow students to take more responsibility for their own learning. A number of individualized, self-paced instructional programs are discussed.

Milton, Ohmer. *Alternatives to the Traditional: How Professors Teach and How Students Learn*. San Francisco: Jossey-Bass, Inc., Publishers, 1972.



The basic theme of this book is that theory and research in learning have been essentially ignored by Higher Education. In its place has accumulated a mythology of accepted traditional practices and hunches about teaching. Milton reviews much of the research on teaching/learning and discusses a number of non-traditional approaches to instruction. These include mastery learning, individualized instruction, flexible time frames, the student's responsibility for learning, interdisciplinary studies, and the changing role of lectures.

Morris, William H., ed. *Effective College Teaching*. Washington, D.C.: American Council on Education for American Association for Higher Education, 1970.

Although written to guide the various disciplines on a college campus, these essays provide an excellent introduction to the various teaching philosophies and academic objectives which an instructional developer will encounter in his tasks.

Mortimer, Kenneth P. *Accountability in Higher Education*. Washington, D.C.: ERIC Clearinghouse on Higher Education and the American Association for Higher Education, 1972.

This is an excellent discussion of accountability in higher education, how it differs from accountability systems in industry and government, the weaknesses inherent in any accounting system used by colleges, and probable trends. It includes an extensive bibliography.

Newman, Frank, et al. *Report on Higher Education*. U.S. Department of Health, Education and Welfare, 1971.

This report by an independent task force funded by the Ford Foundation catalogues many of the current problems facing higher education. In terms of instructional development the key problem as outlined in the report may be the poor match which exists between students' heterogeneous learning styles and the rather homogeneous style of teaching dominant at most institutions. The developer is quite likely to find the chapters entitled "The Homogenization of Higher Education," "The Illegitimacy of Cost Effectiveness," and "Changing Course" which outlines the committee's recommendation, of particular interest. An extensive bibliography is included for each chapter.

Phi Delta Kappa Educational Foundation Fastback Series. 13 titles. Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1972.

This series of small booklets, currently consisting of 13 titles, provides concise introductions to a wide range of topics. Although the issues discussed are

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of the National Opinion Research Center attempt to describe the research underlying media development and the possible impact of the utilization of media upon instructional programs, educational economics, physical plant, and American society in general.

Sanford, Nevitt, ed. *The American College: A Psychological and Social Interpretation of the Higher Learning*. New York: John Wiley & Sons, Inc., 1962.

This is a classic although somewhat dated compendium of 29 scholarly articles which deal with the psychosocial aspects of higher education. Its length, 1034 pages, might prohibit its being read from cover to cover; however, the developer is quite likely to find the chapters on The Developmental Status of Entering Freshmen, The Curriculum in the Perspective of Personality Theory, Procedures and Techniques of Teaching, Personality Changes in College Students and Environments for Learning particularly useful.

Seiler, Karl, III. *Introduction to Systems Cost-Effectiveness*. New York: Wiley-Interscience, 1969.

This is a technical though useful introduction to cost-effectiveness. The analytic procedures presented were developed by the Department of Defense; however, the generic approach may be quite applicable to many higher education contexts. The first three sections of the book deal with cost factors, system cost models, and system effectiveness models. The final section focuses on system cost-effectiveness models and is an attempt to synthesize the first sections into a practical model. The book concludes with a brief but cogent analysis of the role of the cost-effectiveness criterion in decision-making which may be quite useful to both instructional developers and administrators.

Selecting Media for Learning: Readings from Audiovisual Instruction. Washington, D.C.: Association for Educational Communications and Technology, 1974.

This volume consists of a series of reprints of recent articles on media uses in instruction selected from the journal *Audiovisual Instruction*. The articles selected address four general topics:

1. Models and procedures for selecting appropriate media.
2. Guidelines for evaluating media materials.
3. Selecting media in an instructional development context.
4. Production, marketing, and utilization of media.

While not intended to be an authoritative text on the uses and misuses of media, this brief compendium of readings does represent some of the more serious thinking and conceptualization on the topic. As such, it provides a valuable reference source for the instructional developer with limited experience in the media field.

Smith, Philip G. "On the Logic of Behavioral Objectives." *Phi Delta Kappan* 429-431.



In this concise article Smith conducts a penetrating critique of behavioral objectives and the logic of their underlying assumptions. Starting from the premise that "the pedagogical situation determines whether objectives should be precise or vague" he then analyzes a logical fallacy in the common use of behavioral objectives. Too often, he suggests, it is assumed that if a certain behavioral standard has been met, the pedagogical objective which it taps has been realized. Seldom considered are the alternative conditions or variables which may have led to the obtaining of that behavioral standard. Given this logical weakness in the way behavioral objectives are employed, he argues that they be viewed as only one of a number of alternative hypotheses to account for measured or observed achievement. Each of these hypotheses may then be tested further by incorporating them into a design that provides for "convergence of evidence" and the systematic rejection of hypotheses which are unsupported.

Stake, Robert E. "To Evaluate an Arts Program." *Journal of Aesthetic Education*, Fall 1973.

In this short but excellent paper, Stake outlines the concept of "responsive evaluation" as an alternative to "preordinate" plans for the evaluation of educational or instructional programs. Whereas the "Preordinate" approach to evaluation emphasizes goal statements, use of objective tests, standards held by program personnel and research-type reports, "responsive evaluation" is oriented more directly to program processes than to program intents, emphasizes audience requirements for information, and attempts to clarify the different value-perspectives in reporting the success of the program. Stake also outlines a substantive model for "responsive" evaluation and identifies a series of prominent events which are likely to occur as a "responsive" evaluation is carried out.

Tickton, Sidney G., ed. *To Improve Learning: An Evaluation of Instructional Technology*. New York: R.R. Bowker, 1970-71.

Although the area of instructional technology is rapidly changing, decision-makers at all levels of higher education (including faculty, administration, trustees, and if appropriate, legislators) may find this two-volume work to be an invaluable source of impressive findings, conclusions, and recommendations concerning the present and future of instructional technology. Included are (1) a report by the Commission on Instructional Technology; (2) selected working papers on the state of the art of instructional technology; (3) theories and general applications; (4) practical considerations; (5) implications for business and industry; and (6) economic evaluation.

Travers, Robert M.W., ed. *Second Handbook of Research on Teaching, Second Edition*. Chicago: Rand McNally & Company, 1973.



This second edition of the *Handbook of Research on Teaching* contains 42 scholarly articles covering a wide range of theoretical models and research topics. Most of the articles include extensive bibliographies, so that the *Handbook* provides a valuable reference source of empirical findings and areas needing further research. Articles covering The Technology of Instructional Development, Critical Value Questions and the Analysis and Application of Media, Gaming and Simulation, and Research on Teaching in Higher Education may have the most immediate usefulness for the instructional development enterprise.

Twelker, Paul A., Floyd D. Urbach, and James E. Buck. *The Systematic Development of Instruction: An Overview and Basic Guide to the Literature*. Stanford, Calif.: ERIC Clearinghouse on Media and Technology, March 1972.

This is a useful and highly informative paper which traces the application of the systems approach and systems thinking to instructional development. The importance of systems thinking as a management tool in instructional redesign is discussed and the differences between systems approaches are pointed out. Five systems approaches to instructional development are then analyzed and compared in detail. Based on their analysis of these and other systems approach models, the authors present their own generic three-stage instructional development model which is now being employed by the Instructional Development Institutes. The second section of the article contains an excellent annotated bibliography.

Ullmer, Eldon J. and Robert G. Stakenas. *Instructional Development Handbook*. Tallahassee, Florida: Division of Instructional Research and Service, Florida State University, 1971.

This brief booklet provides an excellent introduction to the process of development of the type that a developer might wish to share with faculty involved in instructional development projects.

Zuckerman, David W. and Robert E. Horn. *The Guide to Simulation Games for Education and Training*. Cambridge, Massachusetts: Information Resources Inc., 1970.

Some 400 simulation games are described in terms of objectives, appropriate educational level, game characteristics, source, cost, etc. Business, economics, ecology, education, history, psychology, mathematics, and sociology are among the subject areas listed.