1973

A Thesis on the Formulation of a Manual on Education Development/Change

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A THESIS ON THE FORMULATION OF A

MANUAL ON EDUCATIONAL DEVELOPMENT/CHANGE
(TITLE)

BY

HOWARD BERTRAM TAYLOR

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

MASTER OF SCIENCE IN EDUCATION

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1973
YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

May 18, 1973
DATE

5/29/73
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A THESIS ON THE

FORMULATION OF A MANUAL

ON EDUCATIONAL DEVELOPMENT/CHANGE

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INTRODUCTION

Current literature including specialized books and educational journals such as Hillson's Continuous Progress Education: A Practical Approach; Beauchamp's Curriculum Theory, 2nd Edition; Instructional Systems by Bela Banathy; and Audiovisual Instruction - a journal published by A.E.C.T. have described a relatively new professional field involving Educational Development and Change.[1] This new field requires a different type of professional educator often given such designations as Instructional Developer,[2] Instructional Designer,[3] Change Agent,[4] Role Incumbent,[5] and even an Instructional System's Specialist.[6] The job designates themselves seem to sound like something from the twenty-first century, but in reality they are the jobs of the 1970's.

This brings to light the complexity of the whole field of Educational Development (See Appendix A) including varying degrees of change, whether expansion, improvement or overhauling of single courses or whole school curriculums. Educational changes according to Harbans Bhola can affect all aspects of the school program including instructional media, educational practices, as well as organizational patterns[7] (See Appendix A - Blueprint for Learning).

The development of a change strategy was described as one major process, while its adaptation and diffusion as another. An effective procedure for (development and adaptation/diffusion of) change with a specific sequence or system to follow seemed necessary to insure success.[8]

Before the development of change strategies, and especially before attempting to incorporate them, the professional Instructional

Developer should have an "adequate theoretical framework" in which to place the innovations of educational technology and methods for teaching[9] (See Appendix A). Harbans Bhola described a theoretical framework or model which included four sections that worked together to produce a successful change program. The four sections were: Research, Development, Dissemination, and Evaluation (RDDE). This model is one which has been utilized and proven to be effective by industry and agriculture.[10] One of the reasons for its success was because it required certain conditions to be met by the users, including: (1) a body of educational research (See Appendix A); (2) This research has to undergo development or, has to be applied to classroom problems and converted into products such as new classroom practices, or improved curricular materials; (3) This research must be readily accessible and disseminated; and (4) The research products must be evaluated for effectiveness and impact."

The RDDE model described by Bhola seem to generally conform to James Nord's general description of the Educational Development process with its sub-processes: Curriculum, Instructional, and Evaluation Development[12] (See Appendix A). The method of operating the RDDE model could be through the system's approach as described by Bela Banathy[13] (See Appendix A). Educational Theory and its sub-theories: Curriculum, Instructional, Evaluation and the others as described by George A. Beauchamp[14] (See Appendix A) also related to the RDDE Model closely. Learning Theory as described by Brown, Harcleroad and Lewis,[15] as well as Gerlach and Ely,[16] (See Appendix A) was clearly based on a developmental procedure similarly to the RDDE model.

All four of the areas described in this introduction have terminology, concepts and vocabulary which often become synonymous and ambiguous. This is a problem in developing the field to as successful a level as industry and science have already developed. As with Nord's article, "Instructional Development--A Search for Meaning,"[17] the purpose of this study was to establish in a written manual form "...the conveyance of meaning," for a selective list of terms derived from many sources relating to the field of Educational Development/Change and their related areas.

The definitions will be of three types as based on Nord's description: (1) Stipulative, which are communicatory; (2) Descriptive, which are explanatory; and (3) Programmatic, which are intended to embody programs of action,[18] or to inter-connect terms which are synonymous, all-encompassing, or one aspect of a larger term.

The definitions in the manual will not always follow Nord's "general meaning" concept, but will be useful for the student as an introduction to researching detailed definitions or meanings.

SOURCES CITED

THESIS INTRODUCTION

SOURCES CITED

THESIS INTRODUCTION

1. Harbans Bhola, pp. 22-24.
2. James R. Nord, pp. 11-17.
3. Frank Colton, pp. 24-25.
4. Harbans Bhola, pp. 22-24.
5. George Voegel, "Innovative Diffusion Center," pp. 67-69.
6. Bela Banathy, p. 15.
7. Harbans Bhola, pp. 22-24.
8. Robert Diamond, pp. 6-7.
9. J. W. Gustad in Gene Faris' article, pp. 971-973.
10. Harbans Bhola, pp. 22-24.
11. Harbans Bhola, pp. 22-24.
12. James R. Nord, pp. 11-17.
13. Bela Banathy, p. 15.
14. George A. Beauchamp, p. 103.
15. Brown, Lewis, Harcleroad, p. 27.
16. Gerlach and Ely, p. 43.
17. James R. Nord, pp. 11-17.
18. James R. Nord, pp. 11-17.

PURPOSE OF THE STUDY

The purpose of the study was to formulate a manual that would provide a select list of terms that are frequently associated with Educational Development/Change and related areas along with definitions and comments about each term.

QUESTIONS

1. What are the terms associated with Educational Development/Change and their related areas?
2. What are possible definitions or meanings for these terms?

DELIMITATIONS

The research material was confined to that recently published or produced with a copyright date of 1960, or later for books, and 1965, or later for periodical articles.

LIMITATION

The list of terms was selective and based on the author's decision of what would be included or not included. The accuracy of the study was based on the accuracy of the research material and the recording of it.

METHOD

1. A selective list of terms related to Educational Development/Change and related areas were drawn up and placed in alphabetical order.

2. Some definitions were drawn up for each term.

3. Comments and/or SEE ALSO references about each term were drawn up and documented.

4. A simplified flow chart/model of the process of Educational Development was drawn up.

5. Introductory comments were prepared and documented.

6. A simplified SOURCES CITED list was drawn up.

7. A detailed bibliography of all sources cited was drawn up.

8. The manual was assembled.

9. A written report of the process of formulating the manual was prepared containing the following:

   a. Methods used were described.

   b. The experience was summarized.

   c. Recommendations were offered.

SOURCES

The formulation of the manual included reviewing a number of library books concerning curriculum and instruction. There were three types of books included in which material was found:

1. Primary Sources--books which relied mostly on the original ideas of the author such as: Bela Banathy, Instructional Systems; George A. Beauchamp, Curriculum Theory; Maurice Hillson, Continuous Progress Education: A Practical Approach; Robert F. Mager, Preparing Instructional Objectives; Albert J. Oliver, Curriculum Improvement; Hilda Taba, Curriculum Development: Theory and Practice. These sources are examples of primary sources of which I relied on for information. Any of these sources would be excellent to gain the original insight of modern Educational Development/Change processes and ideas related.

2. Secondary Sources--books which seem to rely on the ideas of primary source authors. These include collections of readings, yearbooks, textbook, introductory books, and many which seem to be heavily footnoted. Examples of which were useful for the study included: The Association for Supervision and Curriculum Development Yearbooks since 1961 (these have central themes which reflect the interest of the time. They are written by leaders in the Curriculum field); James W. Brown and others, AV Instruction: Media and Methods (an excellent general text which gives a solid background for many innovative topics); Contemporary Thought On Public School Curriculum Readings, Edmund C. Short, editor, is one of the better sources used for the study. In it are several major sections covering all aspects of Curriculum Development with several viewpoints for each section by the major (primary source) authors. There are complete chapters from books included as well as complete periodical articles by authors. The book is very complete and up-to-date and would make a good textbook for a college course on curriculum; Readings in Curriculum by Glen Haas covers similar areas by quoting the primary source authors; James Popham and others in Instructional Objectives gives several viewpoints of various types of instructional objectives including behavioral objectives, expressive objectives and others; Visual Literacy: Proceedings of the First National Conference on Visual Literacy with Clarence W. Williams and John L. Debes was also a good secondary source and was used because so much of its material covered Instructional Development and Learning Theory.

3. Audiovisual Instruction--was chosen as the chief periodical-journal source. It was chosen because of its diversity and completeness of coverage. Its articles concerning Educational Development/Change are not media-oriented, but are oriented toward the philosophy of developing professional leaders in the new field. AVI gives reports on project results and innovative-program activities going on across the nation. The study might have been more effective if more periodical journals had been used, but time and practicality made the use of AVI, chiefly, more feasible.

There were some of other sources used such as the Designing Effective Instruction, Workbook. Information from this source is included because it seems to emit the philosophy that Eastern Illinois University is trying to develop in its instructional media program. The slide-tape presentation available in the Audiovisual Center and Booth Library Reserve Room is an effective means of getting a thorough training in the field of Instructional Development. Other sources were paraphrasing of points brought up by instructors at Eastern. Mentioned were points by John North, Kenneth Sutton, Cal Stockman (Workshop), and Floyd Landsaw (personal discussion). Dr. James Reynolds was the main source being advisor and one responsible for designing the format of the study.

The final manual does not truly represent all of the sources encountered. The editing of the list to about one-third of the original number eliminated the quoting and using of a large number of sources. The bibliography, though, includes several of these sources, and the bibliography does contain a selective list of some of the other better sources encountered.

METHODS AND PROCEDURES OF DEVELOPING THE MANUAL

Development of the manual included the following steps and procedures:

1. Researched the library card catalog to obtain a list of all available books relevant to Curriculum/Instruction.

2. Searched the stacks for above books, scanned through books. Checked out books which seemed innovative, less philosophical, and more modern in ideas. This was a subjective selection based on my opinions.

3. Took notes from relevant chapters of books checked out. Noted the chief reference-notes in the books. Established a list of primary-source authors.

4. Decided to use Audiovisual Instruction as the chief periodical-journal source. Went through each issue from 1965 on. Made a list of all articles relevant to the topic. Xeroxed/summarized these articles.

5. Went through all book note cards and xeroxed/summarized articles and underlined all terms or concepts relevant to the topic of the study. Made a complete list of all terms (kept track of where they occurred in the note cards and xeroxed/summarized articles).

6. Edited the list to a manageable number of around 100. This process included elimination of minor, synonymous, or terms which seemed unnecessary to have to know.

7. Went through note cards and xeroxed/summarized articles and drew up definitions for each term. More than one source for each term were utilized when possible. Sometimes the source definition did not work so I made up one myself.

8. Drew up mini-flow charts or diagrams for many terms and concepts. Most are original except for "Designing Effective Instruction" Diagram and Educational Theory (by Beauchamp).

9. The definitions and terms were put in alphabetical order.

10. "SEE ALSO" references were drawn up (see Appendix A).

11. Introductory comments were written for the manual (See Appendix A).

12. A general diagram of the Educational Development/Change process was drawn up (See Appendix A).

13. "Sources Cited Listings" were drawn up.

14. The "Bibliography" was drawn up.

15. The manual was put together.

16. This description of thesis of the study was produced.

SUMMARY

The study was planned to produce a manual listing terms and concepts relevant to the topic and definitions or explanations for each. For most terms this process worked, but for several it was an impossibility. The use of SEE ALSO references made the difficult ones more possible. The editing of the list seemed to lower the quality and completeness of the manual, but the format of the typed page made this editing necessary.

CONCLUSIONS

The study was planned to produce a manual listing terms and concepts with definitions and explanations. The manual fulfilled this purpose even more than was expected. The interconnecting of terms through SEE ALSO references and the use of mini-diagrams seemed to provide life and animation to the dryness of the typed page.

RECOMMENDATIONS

It is recommended that other manuals, designed in varying formats, be produced in such fields as Educational Psychology, Learning Theory, Programmed Learning Development, Instructional Media, Continuous-Progress Education and Nongradedness, Accountability and Evaluation, Student Diagnosis, Educational Communications. This list could be enlarged easily, but there would have to be a central major theme and many sources available for a legitimate manual. Any manual produced would do best to inter-relate and refer to other manuals. Each content area could develop their own manual, and each department could develop

their own including administration, vocational-industrial education, elementary education and any other which uses its own vocabulary or has enough theory and material available to formulate a manual.

APPENDIX A

A MANUAL FOR

EDUCATIONAL DEVELOPMENT/CHANGE

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ABOUT THIS MANUAL

ABOUT THIS MANUAL

This manual is the result of being indoctrinated into a vast new world of technology, systemology, theories and opinions. The field of Instructional Development is new to education and in itself is evolving into an even newer field, Educational Change/Diffusion and Adaptation. The purpose of this manual is to give the student of the field or teachers involved, a basic understanding of the terms and concepts included in the field.

The terms chosen for inclusion in this list are selective and derived from many sources. Personal interests, choice of what seemed most important, as well as ambiguous terms were some of the criteria used to formulate the list. The list would make an ideal "core" for a comprehensive list. A card-entry listing would be the ideal method of constructing the comprehensive listing.

The manual is designed to be used as a reference tool. Each term is listed alphabetically, and "See Also" references after each definition will lead the user to similar or related terms. The "sources cited" listings are simplified. After each twenty-eight, or so, entries, will be a list of "sources cited" with author, title and pages given. The comprehensive bibliography will give detailed imprint information of many sources. The "sources cited" can serve a dual purpose of giving credits and leading the user to detailed information about sources of terms.

I would like to thank my various instructors in the Instructional Media Department of Eastern Illinois University and especially Dr. James Reynolds, Dr. Floyd Landsaw, and Dr. Gene Scholes who gave me ideas, possible sources and, motivation to complete the manual.

INTRODUCTORY STATEMENTS

DEVELOPING EFFECTIVE INSTRUCTION
A PROFESSIONAL SERVICE

Gene Faris, in his article, "Would You Believe An Instructional Developer?" gave a description of how the job of Instructional Developer might appear in the job placement section of a professional education journal in the near future:

> ....A person to work with faculty members in the development of instruction, including the analysis, design, and evaluation of instructional practices. He must be capable of guiding the activities of an inter-disciplinary team in the performance of the above tasks.[1]

Faris, in the same article, discussed the possibility of media specialists as the leaders in the instructional development field. He stressed "the increasingly important role of the media specialist in the design of instruction."[2]

The December, 1971, issue of Audiovisual Instruction, stressed the importance of instructional development by using it as the theme for the month. In that issue Robert M. Diamond stated that "the curriculum, the design of instruction, and the role of the teacher and student exist much as they did twenty years ago."[3] He also wrote that "in short, if we (educators) are doing what we say we are doing, education could not look the same today as it did yesterday."[4]

Also in the December, 1971, issue of Audiovisual Instruction, in an article by James R. Nord, "Instructional Development--A Search for Meaning," there is an attempt to establish a usable meaning of the general concept of Instructional Development. Nord's meaning can be characterized as: (1) moving away from a definition and more

toward the foci of the concepts; (2) moving away from the boundaries and toward the central tendencies; (3) moving away from the programmatic propaganda and toward an analysis of what now exists under the label of Instructional Development; (4) to a more descriptive than programmatic meaning; (5) being a search for central meanings (we can all use); and (6) moving away from the definition of scope which often leads to disputes and confrontation. He also described three foci which are distinct in Instructional Development meaning: input, process, output. These foci occur in varying degrees in all developmental activities.

Nord considered the three foci (input, process, output) and then established three levels of sub-concepts under Educational Development in general including: (1) Curriculum Development or determining what to teach; (2) Instructional Development or determining how to teach it; and (3) Evaluation Development or determining whether it was achieved. Nord's generalized meaning for Educational Development and its sub-concepts were used as the means of structuring the manual. There is a need for structuring due to the vagueness and ambiguity of the field in general.[5]

Hilda Taba was probably most responsible for the "popularization of the term 'teaching strategy'", on which the modern idea of systemized development can be modelled.[6]

Designing effective instruction is a process where an educator or group of educators get together to pre-plan and organize what should and will be taught to a particular group of students. The methods and modes of instruction will also be considered. The

whole process is based upon a lot of time, research, creativeness, and common sense, mixed in with a touch of personal enthusiasm. If any of these elements are lacking, the final design will probably fail.

The instructional designer will have to develop certain personal and professional characteristics. Undoubtedly this person will have to prove his competency and skill to his fellow colleagues. This will mean that he will have to have ready at all times a workable and feasible plan to introduce to any colleague desiring help. This colleague will probably be in a disorganized state, or likewise, perfectly organized with years of experience. Regardless, he will expect wonders or even instantaneous help from the instructional designer.

The instructional designer should have an understanding and patient personality. He could begin his help by simply asking questions, leading in discussions, and offering general suggestions. After convincing the colleague of an interest in his instructional problems, he could introduce the basic outline of his instructional design plan.[7] This general plan could be applied to any course regardless of subject matter.

According to Hilda Taba's theory on planning a unit or curriculum there are eight basic steps to follow. L. C. Larson, Bela Banathy, as well as Gene Faris, all prominent curriculum developers, have similar theories with similar steps. I will use Taba's theory as the model for this paper.

Step one of Taba's model includes the diagnosis of student needs.[8] Such methods of diagnosis as pre-testing, IQ measurement, reading abilities, interests, attitudes, or previously-learned knowledge may be used. These factors should be measured as accurately as possible. Step one is probably the most critical and difficult of the stages.

Step two is the formulation of specific objectives. According to Taba, an objective should consist of: concepts or ideas to be learned; attitudes, sensitivities, and feelings to be developed; ways of thinking to be reinforced, strengthened or initiated; and habits and skills to be mastered.[9] Well developed objectives, stated in behavioral terms, derived from appropriate general goals would make a course or curriculum much more meaningful to the student as well as to the teacher.

Step three, to be developed mainly by the teacher, includes selection of content.[10] General facts, together with details, should be chosen on the basis of necessity, student interests, and possible teacher's special interests. The content should fit into the general goals and behavioral objectives and likewise, serve to fulfill them.

After selection of content, the teacher and instructional designer will have to organize this content or subject matter. This is step four of Taba's model. The organization of content must be kept feasible and logical, based on the sequence of objectives and learning activities.[11] It is up to the teacher at his own discretion to organize the content to fit a logical and smooth flowing design.

Selecting and organizing learning experiences are the activities of steps five and six. Each experience should serve a function in fulfilling a certain objective. There are three main stages of learning experience development: introduction, an opener, and an orientation stage.

Steps seven and eight of Taba's plan are the final stages of developing an instructional design. They include: the evaluation and validation of the objectives; determining of new or more effective objectives; establishment of baselines for learning; and appraising the progress or revisions of the design. Step eight involves the redesigning and balancing of particular sections of the design.[12] Taba's plan would include a system of checks and balances through feedback at any of the eight stages at any time.

The process of instructional design could not be as cut-and-dry as is depicted in the various models or plans, and clearly would involve a tremendous amount of time and hard work. The responsibilities of developing an effective system would be back-breaking. There would be a difference between designing a specific course-unit and an entire program curriculum. The first would be on a one-to-one basis (instructional-designer to teacher) while the second would include a larger group of involved personnel.

If the instructional designer succeeds in helping a teacher to develop a unit, his professional attributes will be realized by other colleagues, and the word will spread around. The instructional designer will have to form a great deal of his theory upon pragmatic

or intuitive decisions.[13] With experience, testing, evaluations, and proving of these decisions, they should become more reliable each time they are applied.

If the instructional designer is a media specialist, then his job will be doubly increased. He will have to be proficient in the use of instructional media and in the placement of it in the instructional design. The media-specialist must also be a system's specialist, because the systems approach is the basis of instructional design. "The role of the media specialist is changing from a keeper and dispenser of teaching aids to that of an analyst and designer of instructional systems."[14]

In conclusion, the media specialist-instructional designer will work with appropriate educational leaders to design learning experiences and to recommend both commercial and locally prepared instructional media/materials suited to specific instructional objectives. He assumes responsibility for the logistics of instructions. He works directly or indirectly with teachers, supervisors, and students to implement the program. He participates in the continued evaluation, redesigning, and production of instructional materials, media and systems.[15] Finally, he has to be a combination of an understanding sensitive human being with a knack for the "gab" and a good "ear".

ADMINISTRATIVE AND LEADERSHIP THEORY

Carlton Erickson in Administering Instructional Media Programs, stated that an effective media program does not just

happen. It only happens where leadership exists for it at two basic levels: the top administration level, and the administration of an individual who is charged with the responsibility for developing and maintaining the media-service program itself. The top level administration determines the need and inauguration of the media program and hires the media director to develop and maintain it.[16]

The media director is a service-oriented professional who is trained to be an expert in the methods and means of teaching. The (AECT) describes him as:

> "A new kind of professional (who) will be required to provide leadership in design, implementation, and evaluation of programs in education which make the fullest use of new media. The functions performed by this leader and the resources he brings will be among the essential determinants of success or failure in tomorrow's schools."[17]

The basic aspects of the media director's job as well as his role as instructional designer have already been discussed, but this characteristic of "educational leader" should be considered, in light of the fact that it will determine the success of his program more than any other considerations. Erickson gives an excellent concise description of the various leadership characteristics. I will use his description as my chief source. His description includes seven parts: (1) leader as an educator; (2) leader as an executive; (3) leader as a consultant or supervisor; (4) leader as a technological expert; (5) leader as an equipment technician; (6) an organizer; and (7) an administrator.[18]

As an educator the media director must be aware of student and teacher needs. An awareness of the culture of the community or

area would help, as would the intellectual, social, and economic levels of the students. The media director should have media and methods which will help all individuals of the school or schools. This will be a tough awareness to develop. Even tougher will be the personal acquaintence and relationship with each of the faculty. If the media director is to provide a good service to all faculty members, then he will have to be aware of the special qualities (weaknesses or strengths) of the teachers. Development of this awareness will take time and patience. It probably would not hurt to develop some sort of mental or written file on each teacher to refer to, when desired.

As an educational leader, the media director will have to be an expert in curriculum and curriculum change. He will have to be able to tear the teaching process apart into its many sharp-edged components, and then put it back together in a stronger and more effective form. He must be competent in the formation of learning objectives; evaluating learning results (whether positive or negative); and in determining the best way for learning to take place. All of these competencies add up to an ability to make good sound educational judgements.[19] If the media director is to become successful in his field he should become comfortable in these activities.

As an executive, the media director must be able to prove the worthwhileness of everything he does. He must be accountable to the top administration for all of his activities, requests, innovations, or changes in the basic program. He must lead in the formulation of policy and see to its execution. Whether he has only

volunteer student personnel or a staff of seventy, the director will be responsible for their training and utilization. He will have a budget to work within, and must administer it effectively. As an executive of a media service, he will be responsible for the procurement, distribution, and maintenance of equipment as well as the environments it will be used in. Most of all, as an educational executive he must develop a closely-knit operation with everyone involved (students, faculty, top-administration, personnel, etc.) working together towards the common goal of giving the students and teachers an effective environment to function in.[20]

The media director and his service program should offer educational leadership in a supervisory and consultant capacity. By keeping the channels of communication open to everyone there should ideally be no problems, but this could be difficult when the basic aspects of the director's job get him bogged down. He must pursue this capacity of consultant for both teachers and school leaders. The media director must see his mission broadly in terms of guiding teachers in specialized methods in order to achieve a more valid learning accomplishment. This guidance will often include educating the teacher to his own weaknesses. This could be a tricky process and its success will depend upon the relationship between the media director and the teacher involved.[21]

As a service-oriented professional, the media director must base his whole program on the philosophy that "Service is our name, and providing it is our game". This might seem humorous, but this is how a good media director becomes a powerful education leader.

Erickson also said that a media director should constantly evaluate his own performances. He should try to strengthen the weaker areas and enlarge upon the stronger ones. He also said that "the role will demand that he be bigger than the technical hardware--operating in a spirit of real service to the teachers (and students)."[22] Parts 5, 6 and 7, are self-explanatory with No. 7, being the total process of being an educational leader.

SOURCES CITED - SECTION I

SOURCE CITED - SECTION I

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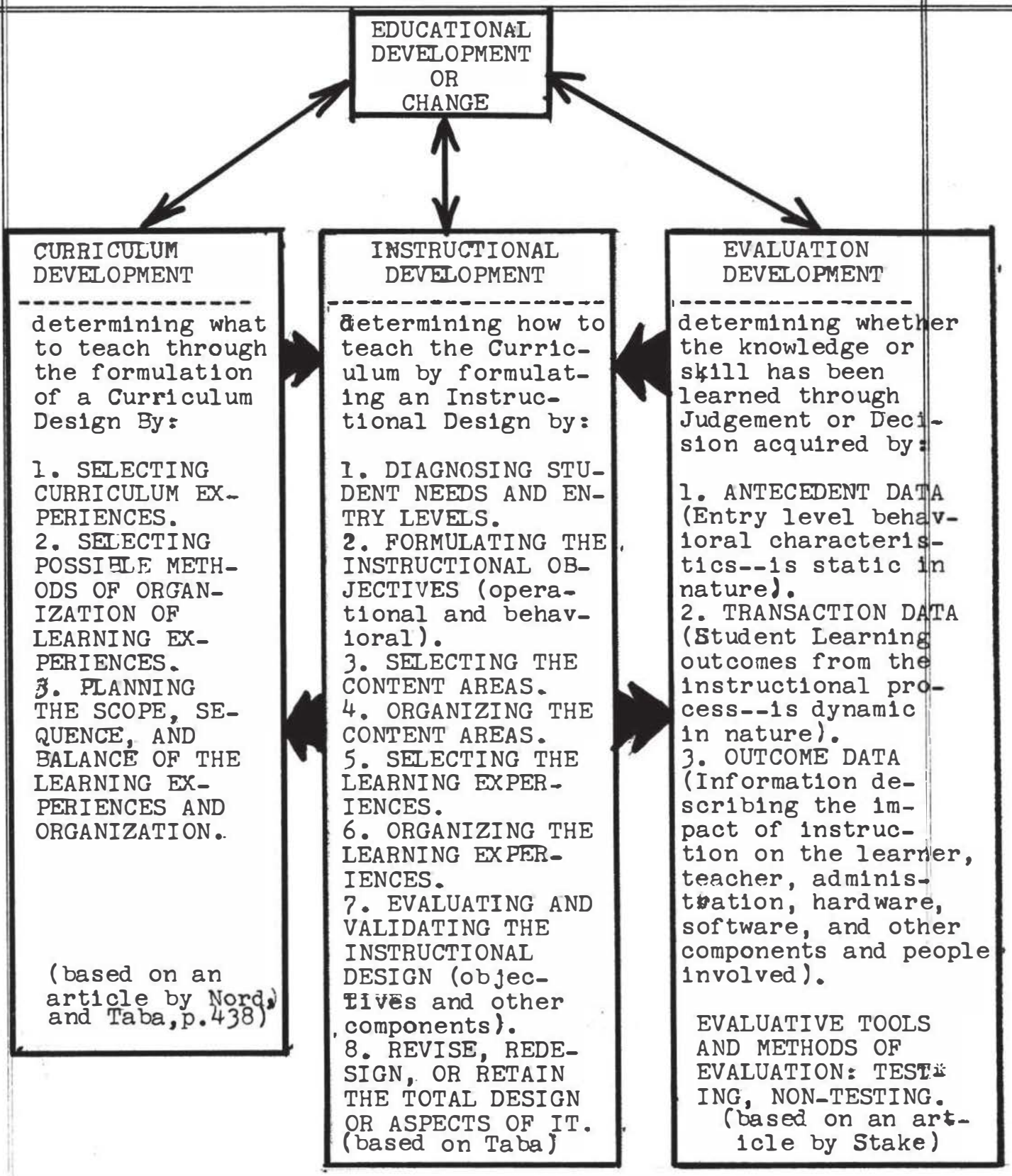
2. Ibid.
3. Robert M. Diamond: p. 6.
4. Ibid.
5. James R. Nord: pp. 11-13.
6. Bruce R. Joyce: pp. 820-827.
7. Larson: pp. 20-24.
8. Hilda Taba: pp. 343-381.
9. Ibid.
10. Ibid.
11. Ibid.
12. Ibid.
13. Bela Banathy: pp. 41-75.
14. Norberg/Ely/and others: p. 1027.
15. Ibid.
16. Carlton Erickson: p. 10.
17. A.E.C.T. in Brown/Norberg/Srygley: p. 17.
18. Erickson: p. 10.
19. Ibid.
20. Ibid.
21. Ibid.
22. Ibid: p. 11.

EDUCATIONAL DEVELOPMENT/
CHANGE DIAGRAM



THE ARROWS REPRESENT THE CONSTANT INTERACTION OF THE THREE PROCESSES. EACH OF THE PROCESSES UTILIZE HARDWARE, SOFTWARE, AND SENSEWARE AND ESPECIALLY PEOPLE. THE PROCESSES PROVIDE INPUT AND OUTPUT INFORMATION FOR EACH OTHER. THEY DO NOT OPERATE ALONE.

A diagram describing the various developmental processes resulting in Educational Development/Change

LIST OF TERMS

LIST OF TERMS

ACCOUNTABILITY

AFFECTIVE DOMAIN

AFFECTIVE OBJECTIVES

ASSOCIATION FOR EDUCATIONAL COMMUNICATION AND TECHNOLOGY

ASSOCIATIVE LEARNING

BEHAVIORAL CHANGE

BEHAVIORAL OBJECTIVES

BLUEPRINT FOR LEARNING

CHANGE AGENT

COGNITIVE CONFLICT LEARNING THEORY

COGNITIVE DOMAIN

COGNITIVE LEARNING OBJECTIVE

COMPUTER-ASSISTED INSTRUCTION

CONTINUOUS PROGRESS EDUCATION

CURRICULUM

CURRICULUM CORRELATION

CURRICULUM DESIGN

CURRICULUM DEVELOPMENT

CURRICULUM DIGEST/OVERVIEW

CURRICULUM EVALUATION

CURRICULUM GUIDES

CURRICULUM SOURCES

CURRICULUM THEORY

DESIGNING EFFECTIVE INSTRUCTION

DIAGNOSTIC TEACHING

DISCRIMINATION OBJECTIVE

DIVISION OF INSTRUCTIONAL DEVELOPMENT

EDUCATIONAL CHANGE

EDUCATIONAL CHANGE ADAPTATION/DIFFUSION

EDUCATIONAL DEVELOPMENT

EDUCATIONAL/INSTRUCTIONAL ENGINEERING

EDUCATIONAL ENVIRONMENT

EDUCATIONAL GOAL

EDUCATIONAL INNOVATION

EDUCATIONAL OBJECTIVE

EDUCATIONAL PROGRAM

EDUCATIONAL RESEARCH

EDUCATIONAL TECHNOLOGY

EDUCATIONAL THEORY

ENTRY AND TERMINAL PERFORMANCE LEVELS

EPISODIC LEARNING

EVALUATION DEVELOPMENT

EVALUATIVE TOOLS/METHODS

EXPERIENCE CURRICULUM

EXPRESSIVE CURRICULUM

FEEDBACK PROCESS

GRADE-STANDARD THEORY

GROUPING METHODS/SYSTEMS

HARDWARE

LIST OF TERMS

HORIZONTAL ORGANIZATION

INDEPENDENT STUDY

INDIVIDUALLY PRESCRIBED INSTRUCTION

INNOVATIVE DIFFUSION CENTER

INSTRUCTIONAL DEVELOPMENT

INSTRUCTIONAL MANAGER

INSTRUCTIONAL MEDIA

INSTRUCTIONAL OBJECTIVE

INSTRUCTIONAL TECHNOLOGIST

INSTRUCTIONAL TECHNOLOGY

INSTRUCTIONAL THEORY

INSTRUCTIONAL VALIDATION PROCESS

INTERACTIVE INSTRUCTION

INTERIM OBJECTIVE

KNOWLEDGE CURRICULUM

LEARNER TYPES

LEARNING TASKS

LEARNING THEORY

NONGRADEDNESS

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PERFORMANCE CONTRACTING

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PROGRAMMED INSTRUCTION

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PSYCHOMOTOR OBJECTIVE

REINVENTION THEORY OF LEARNING

SCHOOL ARTICULATION

SCIENTIFIC APPROACH/ METHOD OF DEVELOPMENT

SENSEWARE

SEQUENTIAL LEARNING

SEVEN CARDINAL PRINCIPLES OF EDUCATION

SOFTWARE

STUDENT DIAGNOSIS

STUDENT LEARNING PROFILE

SUBJECT CONTENT

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VALUE JUDGEMENT

VERBAL INTERACTIVE BEHAVIOR

VERBAL OBJECTIVE

VERBAL PERFORMANCE

VERTICAL ORGANIZATION

VISUAL LITERACY

TERMS AND DEFINITIONS

ACCOUNTABILITY: Cal Stockman in his talk given at the 12th Annual Audio-Visual Workshop at Eastern Illinois University (February 9, 1973) described some of the major points relating to "Accountability/ Inservice and Curriculum Development": (1) "Formal Accountability"- are the roles (job-performance requirements) defined in a written form such as a contract or manual and are most often legal and basic for the educator to achieve; (2) "Informal Accountability" - are the roles (job-performance requirements) mutually understood and expected with the job, and not usually written or legal in form; (3) "Accountability Link" - is the determination of whom the educator is to be accountable to; (4) "Getting specific about your job (role)" is a major characteristic of accountability; and (5) Accountability is a process of evaluation.[1]

SEE ALSO: PERFORMANCE CONTRACTING, EVALUATION DEVELOPMENT

AFFECTIVE DOMAIN: is a term referring to a person's personal attitudes, feelings, interests, values, and related subjective characteristics. Gerlach and Ely refer to affective domain as being "...primarily concerned with behaviors that are related to the emotions."[2] Affective development pertains to the acquisition of the characteristics previously given and to the development of the person as a "whole being".[3] The development of the affective domain through the teaching/ learning process could be accomplished by establishing affective objectives. See Fig. 3, p. 52.

SEE ALSO: AFFECTIVE OB ECTIVES, LEARNING THEORY

AFFECTIVE OBJECTIVE: "An objective dealing with emotions or feelings indicated by words such as interest, appreciation, enthusiasm, motivation, and attitudes."[4] They are the most difficult to construct and measure, but are very necessary in the total education of the student. See Fig. 3, p. 52.

SEE ALSO: AFFECTIVE DOMAIN, BEHAVIORA OB ECTIVES

ASSOCIATION FOR EDUCATIONAL COMMUNICATION AND TECHNOLOGY (AECT): "is a professional organization which is exerting national leadership in the improvement of instruction and the effective management of learning through instructional development."[5]

SEE ALSO: DIVISION OF INSTRUCTIONAL DEVELOPMENT, (DID)

ASSOCIATIVE LEARNING: SEE LEARNING THEORY

BEHAVIORAL CHANGE: is often considered synonymous with learning. Gerlach and Ely stated that "... change in behavior must be interpreted as either acquisition or extension."[6] Acquisition is the adding or acquiring of new behavior, while extension is the expanding or enlarging of allready established behavior.[7] Behavior changes can be specified and described in behavioral objectives as criteria to be learned.

SEE ALSO: BEHAVIORAL OBJECTIVES, LEARNING THEORY

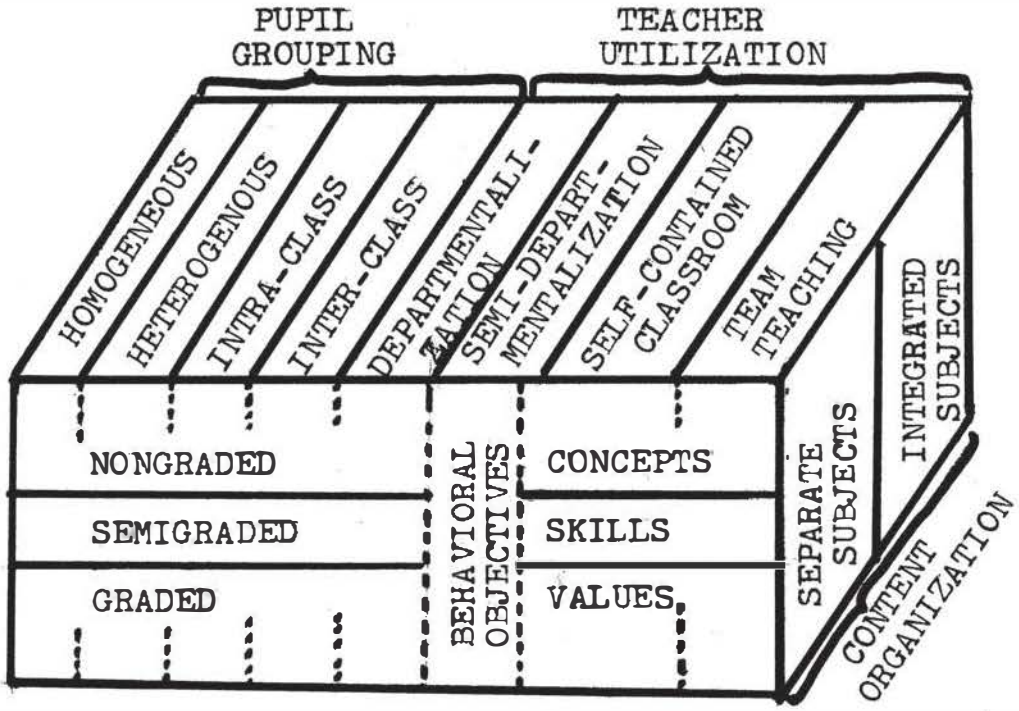
BEHAVIORAL OBJECTIVES: are primary factors in an instructional development process. Skill and practice are required in their construction, but if the writer makes them specific, clear, and understandable, he shouldn't have too many problems. Behavioral objectives can be defined as "the descriptions of the form of the behavior that instruction is to produce, stated in terms of what the student is to be able to do."[8] Effective behavioral objectives require: (1) Conditions; (2) Standards; and (3) Specific methods of demonstrating the skill or performance. A behavioral objective can describe practically any kind of learning including affective and cognitive. Within the structure of behavioral objectives are: interim objectives, "...temporary performance which aids the student in attaining the terminal performance requirement, but which (are) usually dropped after terminal criterion in reached.";[9] as well as subobjectives which describe "...(specifications) of performance which (are) part of a larger objective."[10] Methods of performance described in behavioral objectives could be headed by three major types: Motor, Verbal, and Discrimination. A writer of behavioral objectives must obey the "rule of specificity" and remember that the more general aims and goals of education should be stated separately in Educational Goals before any behavioral objectives. Behavior change criteria displayed by the student should be measurable through some manner according to the criterion test items.[11] Types of behavioral objectives and their sub-components are schematically explained in Figure 3, page 52 in the manual.

SEE ALSO: AFFECTIVE OBJECTIVES, COGNITIVE OBJECTIVES, INSTRUCTIONAL DEVELOPMENT, INSTRUCTIONAL DESIGN, BEHAVIORAL CHANGE

BLUEPRINT FOR LEARNING:

Based upon diagrams drawn by Frost[12] and Beauchamp[13]

Fig. 2



According to Floyd Landsaw, Instructional Designer at Eastern Illinois University, the blueprint for learning is the master-plan for learning/teaching as prescribed by an instructional design. It can be flexible according to special needs, but is firm in that it requires certain educational/instructional goals and objectives to be fullfilled. He also said (paraphrased) instructional media should not be planned or implemented until the educational blueprint is completed. The blueprint for learning could be compared to a blueprint for a house, and instructional media to the nails and lumber.

SEE ALSO: any term which seems to fit into the blueprint for learning, and especially those given above in the diagram.

CHANGE AGENT: "A professional person who attempts to influence adoption decisions in a direction he thinks is desirable."[14] He could function by: (1) offering resource information; (2) talking to faculty or staff members about such resources; (3) leading in adoption and implementation; (4) being accessible to all clients. A change agent could be any kind of educational professional (instructional developer, media specialist, librarian, curriculum developer, etc.) and should be fluent and capable in value establishment, teacher-attitude development, public relations and communication.[15]

SEE ALSO: EDUCATIONAL CHANGE, EDUCATIONAL CHANGE ADAPTATION/DIFFUSION, THESIS INTRODUCTION

COGNITIVE CONFLICT LEARNING THEORY: "The theory...posits that if a learner is confronted with two alternatives (explanations for the same thing) he must take an active part (i.e. reinvent) in deciding which alternative is better... The child learning by this method is doing critical thinking--sorting out from various answers--the best, the cheapest, etc."[16] Cognitive conflict forms a sort of "inquiry loop" in which the learner has to reach decisions through inquiry."[17]

SEE ALSO: LEARNING THEORY, INSTRUCTIONAL DEVELOPMENT

COGNITIVE DOMAIN: Bloom defined the cognitive domain as "...including the behaviors: remembering, reasoning, problem solving, concept formation, and to a limited extent, creative thinking."[18] Gerlach and Ely defined it as "...pertaining to the recall or recognition of knowledge and the development of intellectual abilities and skills... Most school learning falls into the cognitive (domain or) category."[19]

SEE ALSO: COGNITIVE DOMAIN , LEARNING THEORY, BEHAVIORAL OBJECTIVES

COGNITIVE LEARNING OBJECTIVES: According to Krathwohl, Bloom, and Masia, are learning objectives "...which emphasizes remembering or reproducing something which has presumably been learned (and can also) involve the solving of some intellective task for which the individual has to determine the essential problem and then reorder given material or combine it with ideas, methods, or procedures previously learned....Cognitive objectives vary from simple recall of material learned to highly original and creative ways of combining and synthesizing new ideas and materials."[20]

SEE ALSO: COGNITIVE OBJECTIVE, LEARNING THEORY, BEHAVIORAL OBJECTIVES

COMPUTER-ASSISTED INSTRUCTION (CAI): Farr described CAI as a "new teaching technology in which the ...source of instruction is a course or series of lessons prepared by a course author who is (or should be) a subject-matter expert. The course author is responsible for deciding what will be taught, how it will be taught, and how the teaching will be evaluated. That is, he determines the goals, strategies and tactics of teaching and evaluation. In this respect he operates as most textbook authors and classroom teachers do. However, instead of presenting his course in a book (or other traditional form of software)

the course author presents his instruction by means of the equipment (hardware) included in what is called a student station or instructional terminal."[21] The hardware of a CAI system includes: typewriter keyboards in which the student can communicate with the computer, cathode ray-tubes, light pens, image projectors, and even television screens and of course the computer. Software could include: motion picture films, video-tapes, color transparencies, and the program. Farr also said that "CAI's ability to show students significant movement (reward, gratification and motivation in really seeing progress) and to provide immediate evaluation will result in effective and efficient learning."[22]

SEE ALSO: EDUCATIONAL DEVELOPMENT, INSTRUCTIONAL DEVELOPMENT, PROGRAMMED LEARNING, CONTINUOUS-PROGRESS EDUCATION

CONTINUOUS-PROGRESS EDUCATION: Maurice Hillson in Continuous-Progress Education: A Practical Approach (1971), covered the subject very completely. Continuous-Progress Education (CPE) encompasses practically all current influential teaching innovations including: independent study, individualized instruction, programmed learning, flexible scheduling, non-gradedness, the inquiry approach, diagnostic teaching, learner-package theory, and the list could go on and on. This fact alone makes a specific definition of (CPE) difficult and impractical.[23] J. B. Carroll developed a model containing "five specific areas" which are necessary to create "mastery of learning tasks": (1) Aptitude-the amount of time required by the learner to attain mastery; (2) Perserverance-the amount of time the learner is willing to spend in learning efforts; (3) Ability to understand instruction-the learner's understanding of the nature of the task that he is to learn and the procedures that he is to follow in the learning task; (4) Quality of instruction-the degree to which the presentation, explanation, and ordering of the elements of the task to be learned and represents the optimum for a given learner; and (5) Opportunity for learning-the time allowed by the teacher or the school for the pupil to practice, and thereby, really learn to perform the task.[24] Hillson listed several ideas essential to a well-thought-out program of Continuous-Progress and nongraded education: (1) Each pupil is actually involved in a program of Continuous-Progress (he is motivated with the program). He is the baseline for his own program and his own level is determined through an effective diagnostic process. Entry and terminal levels are determined for each pupil; (2) Such factors as pupil retardation, promotion and non-promotion (which occur with Grade-Standard Theory) are irrelevant with (CPE). The operations and procedures of (CPE) eliminate the problems of a Grade-Standard Theory; (3) A wholesome consideration is given to the entire area of readiness (quality or state of being ready). The pupils avoid establishing a habitual practice of failure because they cannot address the required skills (learning activities they confront). Through (CPE) pupils develop positive attitudes and their general "...educational productivity" will be enhanced; (4) there are no ceilings on learning in (CPE) and nongraded schools. Each child moves at his own pace. To successfully incorporate (CPE) and nongradedness a total committment

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SOURCES CITED - SECTION 2

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22. Ibid.
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30. Ibid.

must be made from all participants involved: (5) (CPE) and non-gradedness are enhanced by the opportunity for teacher collaboration. By establishing opportunity for systemized continuous teacher collaboration (to cooperate or work together jointly), a variety of input is possible. The results of this collaboration are more fruitful than individual decisions, and the continuuing desire to upgrade the educational activities of the school are more fully realized.[25] Hillson described a school with (CPE) and nongradedness and the five features above as: "...a school where there are no grade designations; instead there are various curricula defined in stages (or levels) of learning, specifically created, sequenced, and clearly described for learners."[26]

SEE ALSO: EDUCATIONAL DEVELOPMENT, INSTRUCTIONAL DEVELOPMENT, CURRICULUM DEVELOPMENT, INDEPENDENT STUDY, COGNITIVE CONFLICT LEARNING THEORY

CURRICULUM: defined by Webster's Seventh Collegiate Dictionary as "1. the courses offered by an educational institution or one of its branches; 2. a set of courses." If curriculum is considered as an entity this definition would suffice. If considered as a, "process," curriculum becomes a very complicated composition of many dynamic sub-processes such as source-inputs, development, implementation, evaluation, as well as changing to survive and improve. A curriculum is developed by a group of people (in most instances) and will be as effective as those people. Neagley defined curriculum as "all of the planned experiences provided by the school to assist pupils in attaining the designated learning outcomes to the best of their abilities."[27] Beauchamp gave three ways the term curriculum could be used: (1) "...a written document which may contain many ingredients, but basically...is a plan for the education of pupils...in a given school"; (2) "...as a sub-system of schooling...within which decisions are made about what the curriculum will be and how it will be implemented"; and (3) "...to identify a field of study."[28]

SEE ALSO: CURRICULUM DEVELOPMENT, CURRICULUM SOURCES, CURRICULUM THEORY

CURRICULUM CORRELATION: "it is assumed that, although two (or more) subjects often exist in a school side by side with no apparent relationship, there are some possible points of contact....In some cases these points are 'natural' (such as mathematics to physics)."[29] Social studies and English are two frequently used disciplines or subjects utilized to help in the correlation of other subjects. They seem to bring common points of interest and similarity together.[30]

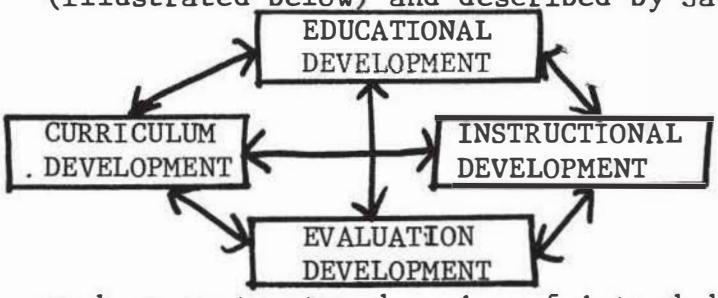
SEE ALSO: CURRICULUM, CURRICULUM DEVELOPMENT, SUBJECT CURRICULUMS

CURRICULUM DESIGN: Herrick defined a Curriculum Design as being "...a statement of the pattern of relationships which exist among the elements of curriculum as they are used to make one consistent set of decisions about the nature of the child."[1] He went on to say that the role of curriculum design in the improvement of educational programs relates to the following functions: (1) a definer of the elements of curriculum

and their pattern relationships in Curriculum Development; (2) a statement of the means used for selecting and organizing learning experiences; and (3) an indicator of the roles of the teachers and children in curriculum planning and development.[2] Hilda Taba developed a plan for development of a Curriculum Design. (See the Introduction to the Manual, p. 36).

SEE ALSO: CURRICULUM DEVELOPMENT, CURRICULUM, CURRICULUM THEORY

CURRICULUM DEVELOPMENT: as a sub-process of Educational Development (illustrated below) and described by James R. Nord (Audiovisual Instruction, Dec., 1971):



"Curriculum Development appears to be that process which accepts certain inputs such as student data, instructor opinion, boundary of the system, etc. and converts them into outputs such as a structured series of intended learning outcomes."[3] The meaning of the term curriculum has a bearing upon the meaning of Curriculum Development (whether tight or narrow or general and loose). Curriculum Development can also mean process and policy formulation (all according to the philosophy and intention of the developer). Curriculum Development inputs includes People (content specialists, school administrators, teachers, and students); Sources of influence (as described under Curriculum Sources in the manual); Economics and feasibility; and other related determinant inputs. Outputs include People (enlightened faculty and students, department heads, laymen, etc.-all according to their degree of involvement as input). Processes include Change, Transactions, Functional Relationships between participants, and Activities involved. The result of Curriculum Development is a Curriculum Design (which is discussed in a separate section in the manual). A Curriculum Development process will not work alone. It must be converted into an Instructional Design through the Instructional Development process and then evaluated through the Evaluation Development process, to create the total Educational Development product. Likewise the Curriculum Development Design is based upon the Educational Development goals and objectives. It is a constant interacting process based upon change, revisement and hopefully improvement rather than stagnation.[4] See Figure 1, page 36.

SEE ALSO: CURRICULUM, CURRICULUM THEORY, CURRICULUM DESIGN, INTRODUCTION TO THE MANUAL

CURRICULUM DIGEST/OVERVIEW: Neagley summarized that "the curriculum digest or overview is a summary-type of local guide which usually lists the district's (or educational system's) philosophy of education and major curricular goals. This is followed by a very brief summary of each subject area taught, including objectives, areas of emphasis, content, and major instructional materials."[5]

SEE ALSO: CURRICULUM GUIDES, CURRICULUM, CURRICULUM DEVELOPMENT

CURRICULUM EVALUATION: could involve two types of evaluation: First--how the curriculum compares to established standards of excellence, according to curriculum theorists, specialists, etc., such as Saylor and Alexander's checklist of points of a "good curriculum": (1) systematically planned and evaluated; (2) promotes continuity of experiences; (3) arranges learning opportunities flexibly for adaptation to particular situations and individuals; (4) utilizes the most effective learning experiences and resources available; (5) makes maximum provision for the development of the learner.[6] Methods of curriculum evaluation could involve a Second type--actual methods of evaluating the success of a curriculum in fulfilling the goals and aims prescribed. Methods and means of this type of evaluation should be decided upon in the total Curriculum Development process.[7]

SEE ALSO: CURRICULUM DEVELOPMENT, EVALUATION DEVELOPMENT, EVALUATIVE TOOLS

CURRICULUM GUIDE: is defined by Neagley as "a guide to the objectives, content, learning experiences, and instructional resources that emerge from a curriculum development process.....The preparation of the written guide is an important step in the entire process of curriculum development.....The format must be in an organized, clear, and concise manner... Curriculum guides should be loose-leaf bound and blank pages included for teacher notes....Any outside-produced portions should conform to all the criteria set up by the curriculum committee (developer)."[8]

SEE ALSO: CURRICULUM DIGEST/OVERVIEW, CURRICULUM DEVELOPMENT, CURRICULUM

CURRICULUM SOURCES: Edmund Short wrote that "a curriculum designed to produce fully functioning democratic citizens must be based on: (a) the demands of the society in which the learners live; (b) the needs, interests, maturity, goals and ability of a particular child or group of children at a particular time in (their) development; (c) the democratic heritage, and values which society cherishes and wants perpetuated. The curriculum, to be functional must also be meaningful and significant to individual student goals and provide for the total development of the child."[9]

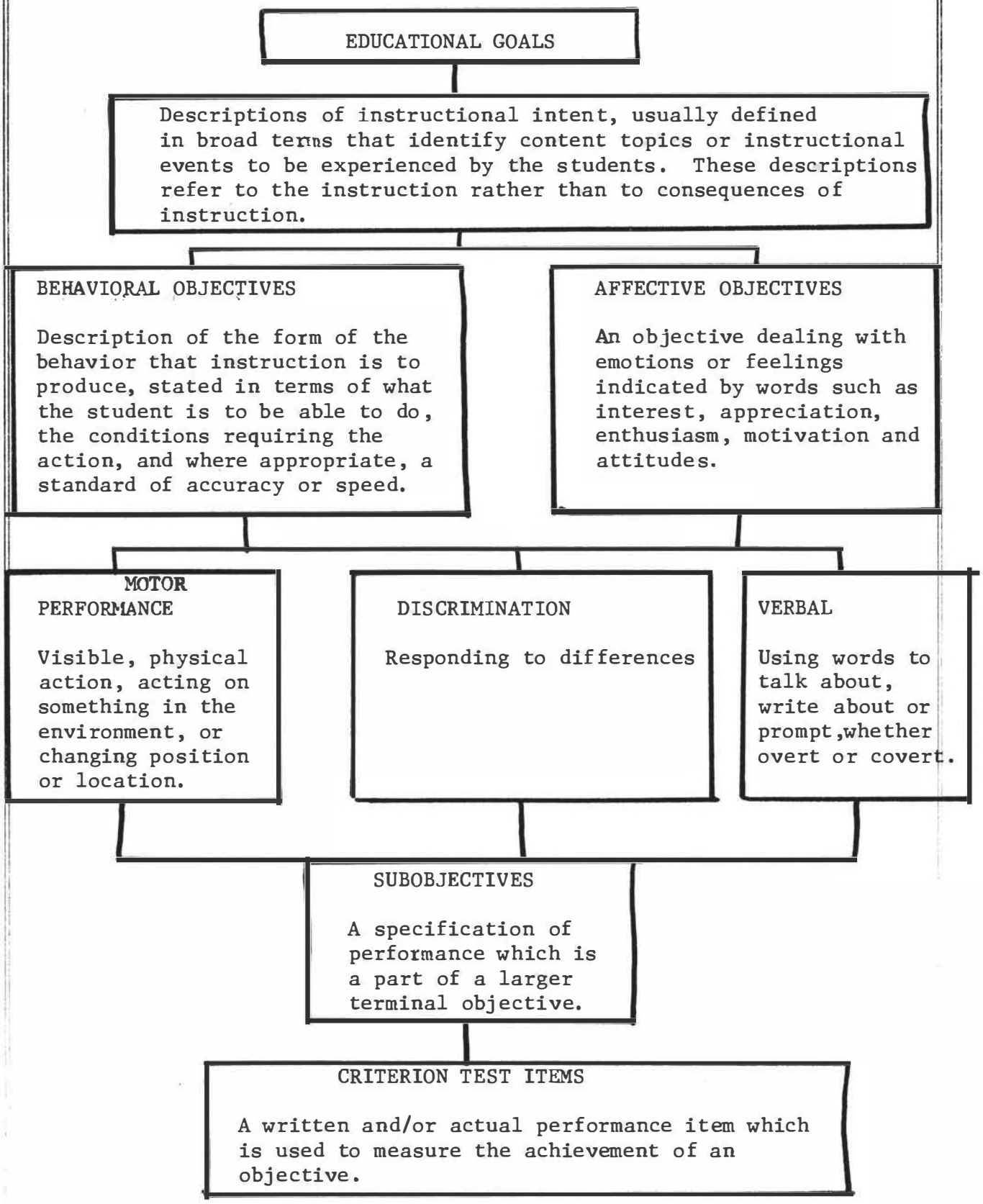
SEE ALSO: CURRICULUM, CURRICULUM DEVELOPMENT, CURRICULUM DESIGN, CURRICULUM THEORY

CURRICULUM THEORY: is a sub-theory of Educational Theory.[10] Short described the main purpose of a Curriculum Theory being "to increase understanding of curricular phenomena....."[11] Many curriculum scholars are well aware of the difference between a curriculum position and a curriculum theory: A curriculum position (platform) proposes policy; while a curriculum theory provides explanations and rationale.[12] Beauchamp defined curriculum theory as "...a set of related statements that give meaning to a school's curriculum by pointing up the relationships among its elements and by directing its development, its use and its evaluation."[13] See Figure 5 Page 61.

SEE ALSO: CURRICULUM, EDUCATIONAL THEORY, CURRICULUM DEVELOPMENT

DESIGNING EFFECTIVE INSTRUCTION: Fig. 3

From "Designing Effective Instruction."[14]



DIAGNOSTIC TEACHING: Generally is considered a system's approach of educational/instructional development. Basic goals and a basic strategy of instruction are conceived before any specific student diagnosis is utilized. After these basics are decided upon, each student is diagnosed for learning capabilities (present and future). The teaching strategy will be tailor-made for each student according to the individual diagnosis.[15] Diagnostic teaching is closely related to continuous-progress education and individualization of instruction. Methods of diagnosis could be testing, interviewing, student past performance records, etc.[16]

SEE ALSO: LEARNER TYPES, CONTINUOUS-PROGRESS EDUCATION, INSTRUCTIONAL DEVELOPMENT, ENTRY AND TERMINAL LEVELS OF PERFORMANCE, STUDENT DIAGNOSIS

DISCRIMINATION OBJECTIVE: "involves the ability to select two or more similar alternatives" and is a type of behavior change stated in a behavioral objective.[17] See Fig. 3, p. 52.

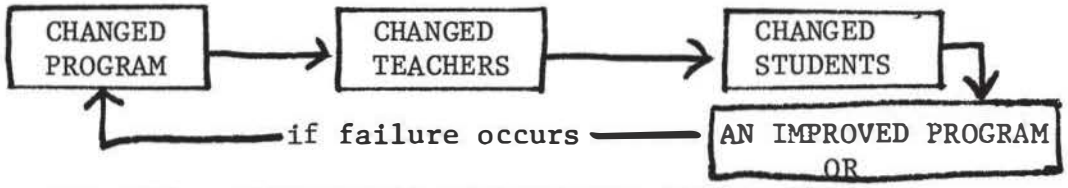
SEE ALSO: BEHAVIORAL OBJECTIVES, INSTRUCTIONAL OBJECTIVES

DIVISION OF INSTRUCTIONAL DEVELOPMENT: is a major division of the Association for Educational Communication and Technology. It represents the importance of Instructional Development as a field. The popular labeling of the division is DID.[18]

SEE ALSO: ASSOCIATION FOR EDUCATIONAL COMMUNICATION AND TECHNOLOGY

EDUCATIONAL CHANGE: means exactly what it says: Educational Change--the acquisition or implementation of new or different characteristics (philosophies, goals, objectives, methods, means, attitudes, etc.) to an educational system. Social changes can come about because of three to four different reasons (according to John North): (1) Evolution-a slow and natural process which will occur without any direct immediate influence; (2) Adaptation-a quicker and more immediate type which is caused by force (economic, feasibility, social, and even students); (3) Invention through objectivity-brought about because of a desire for betterment or a logical need (through teachers, administrators, society, and students).[19] Educational change would seem to occur in a similar manner, since education is a major aspect of society. North also described three types of educational change which have occurred over the history of American education: (1) Gradual Change - which has occurred since Colonial times to present; (2) Revolutionary change-which occurred during the 1930's and in the 1950's with Sputnik; (3) Radical change - which occurs frequently in contemporary times with practically every new innovation. Radical change can be too rapid or too slow.[20] J. William Moore listed four criteria which give direction in programs of educational development or change: (1) The program should provide those conditions necessary for the personalization of instruction and for a wide range of learner abilities and interests; (2) The program should possess systematic self-improvement dimensions and capabilities to avoid becoming as static as the program it replaced;

(3) The program should minimize the difficulty involved for the teacher to change (this could be the major and most difficult aspect); and (4) The program must be financially feasible for the system.[21] After adapting and diffusing the program change (considered in a separate discussion) everyone involved should give it a chance to function and survive. A model-pilot program would be the ideal method of pre-evaluating the effectiveness of a change. The simple diagram below illustrates the change process:



SEE ALSO: EDUCATIONAL DEVELOPMENT, EDUCATIONAL CHANGE DIFFUSION/ADAPTATION, INNOVATIVE DIFFUSION CENTER, CHANGE AGENT

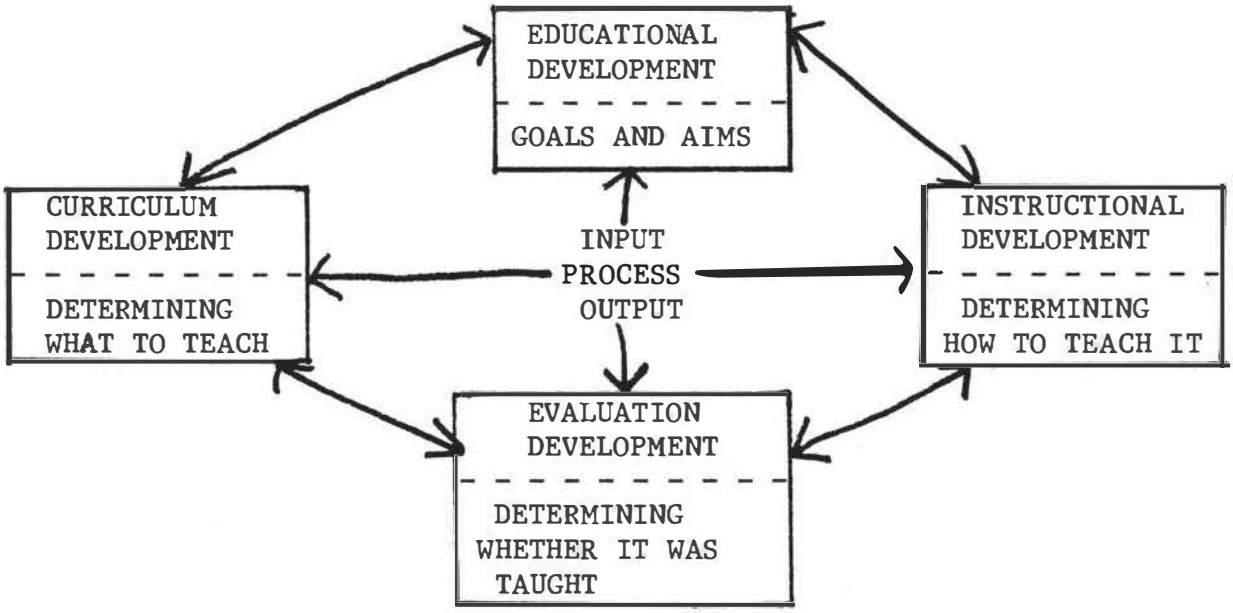
EDUCATIONAL CHANGE ADAPTATION/DIFFUSION: the Association for Supervision and Curriculum Development stated that "...only those changes should even be tried out and tested and, certainly, only be diffused to....school systems that clearly, in the eyes of insightful and skillful judges and students of education, adhere to and enhance in all their ramifications (the educational system being changed)..."[22] An Innovative Diffusion Center and an effective operator (change agent, Educational Developer, Instructional Developer, or Media Professional) could bring about and diffuse effective changes in an educational system.

SEE ALSO: EDUCATIONAL CHANGE, INNOVATIVE DIFFUSION CENTER

EDUCATIONAL DEVELOPMENT: According to Voegel there is a beginning of a "model backlash" or an overloading of educational research and development with theoretical models and plans which work beautifully on paper but never practically.[23] James R. Nord in "Instructional Development--A Search for Meaning," Audiovisual Instruction, December, 1971, tried to organize some of the ambiguous, synonymous, and repetitive terminology acquired from the "various models, plans and theories" into a meaningful unit. Through the diagram (below) I have attempted to schematize Nord's final concept of having Educational Development as the main process of educational change and development and three sub-processes: Curriculum, Instructional, and Evaluation Development.[24] The arrows represent the fact that none of these processes are independent, but are interdependent. Each process uses forms of input-process-output in varying ways. Each also uses hardware, software, and senseware in varying ways. Nord also stressed "people" as a prime aspect for each process.[25]

Fig. 4

THE EDUCATIONAL CHANGE
AND DEVELOPMENTAL PROCESS



Educational Development is a means of fulfilling educational change. Harbans Bhola in "Training the Change Makers in Education," Audiovisual Instruction, January, 1973, described some of the major aspects of a Research-Development-Dissemination-Evaluation model (R-D-D-E). This is one model which has been proven to work (practically) by industry and agriculture. One of its requirements for use by education is a body of research. A second requirement is a role incumbent, which is a technical name for a professional "Change Maker" or "Change Agent" (diffusionist, disseminator, developer, etc.). Role incumbents "...work within and determine the objectives of systems," and lead in development, selling, implementation, evaluation and revisement of the change product (maintenance and continuance of the change would be the responsibility of the educational system which incorporated it--in my opinion). The R-D-D-E model is a way of systemizing and organizing the total Educational Change Adaptation/Diffusion process.[26] See the Fig. 1 p. 36.

SEE ALSO: CURRICULUM DEVELOPMENT, INSTRUCTIONAL DEVELOPMENT, EVALUATION DEVELOPMENT, EDUCATIONAL CHANGE, EDUCATIONAL CHANGE ADAPTATION/DIFFUSION, SYSTEMS APPROACH

EDUCATIONAL/INSTRUCTIONAL ENGINEERING: Is basically the use of the system's approach in developing an effective instructional design. Every aspect of the instructional design and strategy are spelled out in detail via a systematic form of engineering. See Fig. 6, p. 83.

SEE ALSO: SYSTEM'S APPROACH, EDUCATIONAL TECHNOLOGY, EDUCATIONAL DEVELOPMENT, PROGRAMMED LEARNING

EDUCATIONAL ENVIRONMENT: according to Banathy includes "the larger context (society) in which a system operates, from which it receives its purpose and resources and to which it is responsible for the use of resources and for the adequacy of its output,"[27] as well as the

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30. Gerlach/Ely: p. 49.

student's home-life, school-life, and intra- and inter-personal relationships with his or her peers. All of these add up to a total educational environment.

SEE ALSO: EDUCATIONAL DEVELOPMENT, CURRICULUM DEVELOPMENT, GROUPING (ORGANIZATION OF STUDENTS WITHIN THE LEARNING ENVIRONMENT), METHODS/SYSTEMS

EDUCATIONAL GOAL: is a "description of instructional intents usually defined in broad terms that identify content topics or instructional events to be experienced by the student. These descriptions refer to the instructional process rather than to the consequences of instruction."[28] See Fig. 3, p. 52.

SEE ALSO: EDUCATIONAL DEVELOPMENT, EDUCATIONAL OBJECTIVE, TEACHING STRATEGY

EDUCATIONAL INNOVATION: as Voegel described, is "....a deliberate, novel, or specific change which is thought to be effective in accomplishing the goals of a system."[29]

SEE ALSO: EDUCATIONAL CHANGE, EDUCATIONAL DEVELOPMENT

EDUCATIONAL OBJECTIVE: Gerlach and Ely defined an objective as "...the term used to describe an outcome, a goal, a purpose, or any of the other terms used to describe the end result of successful instruction."[30]

SEE ALSO: INSTRUCTIONAL OBJECTIVES, BEHAVIORAL OBJECTIVES

EDUCATIONAL PROGRAM: Lawhead defined the roles of general and special education programs: General Education includes "...that aspect (of education) which deals with helping the student solve those personal-social problems common to all citizens in a democracy."[1] Special education includes the premise that "....schools are obligated to develop optimally the individual capacities which serve to enrich and to enhance group life."[2] "The total faculty-staff must be aware of both major educational programs."[3]

SEE ALSO: EDUCATIONAL DEVELOPMENT, SCHOOL ARTICULATION

EDUCATIONAL RESEARCH: is an activity in which any truly professional and involved educator (teacher, administrator, etc.) would include as part of his basic preparatory work. Bhola discussed various aspects of educational research and came to the conclusion that there must be a body of educational research or "...a fund of tested ideas" about teachers, teaching, and students. Educational research, unlike scientific or industrial research, seems to be very much in a hodge-podge of disorganization. National organizations such as ERIC, Research and Development Centers, Regional Laboratories, and Curriculum Development Centers are beginning to organize and disseminate important research projects to the users.[4] Oliver described educational research as a "...continuum from the stumbling subjective attempts of a teacher to cope with some educational problem--to--the "precise, systematic

design laid down by the skilled researcher."[5] Oliver also divided educational research into two types: Action Research, which is accomplished by the actual users (teachers, administrators, media directors, etc.) and used to solve the educational problems directly relevant to them; and Basic Research which is accomplished by outsiders (theorists, writers, college professors, etc.) to solve problems of education in general. It is less practical and more theoretical in form than Action Research, and will serve no real purpose unless digested, understood and utilized by school system users. Action Research seems to be the most meaningful for a school system to undertake, because it is accomplished by the users.[6] Educational Research is closely related to the more scientific psychological and learning fields, and much of its information is derived from those sources.

SEE ALSO: LEARNING THEORY, EDUCATIONAL THEORY

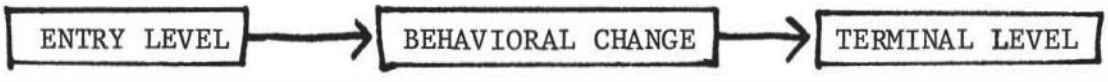
EDUCATIONAL TECHNOLOGY: is synonymous with instructional technology and is "....a set of principles and procedures used to analyze instruction, design instruction, instruct, and provide quality control."[7] Technology usually refers to machines and hardware, but actually it can refer to software and senseware. Methods of teaching (team-teaching, continuous-progress education, etc.) could also be considered as a form of Educational Technology. Webster's Seventh New Collegiate Dictionary defined technology as "1. technical language; 2. (a) applied science, (b) a technical method of achieving a practical purpose...."[8]

SEE ALSO: INSTRUCTIONAL DEVELOPMENT, HARDWARE, SOFTWARE, SENSEWARE, TEACHING STRATEGY

EDUCATIONAL THEORY: According to Beauchamp there is no concise definition of educational theory as an entity. He said, "A review of the literature treating educational theory reveals that the subject is discussed under the following general headings: theory and practice, theory and philosophy, theory in school administration, instructional theory, and complete educational theory."[9] Before any practical theory in the form of a curriculum or instructional design can be developed a strong theoretical understanding based on educational research is necessary and go hand-in-hand (in my opinion).

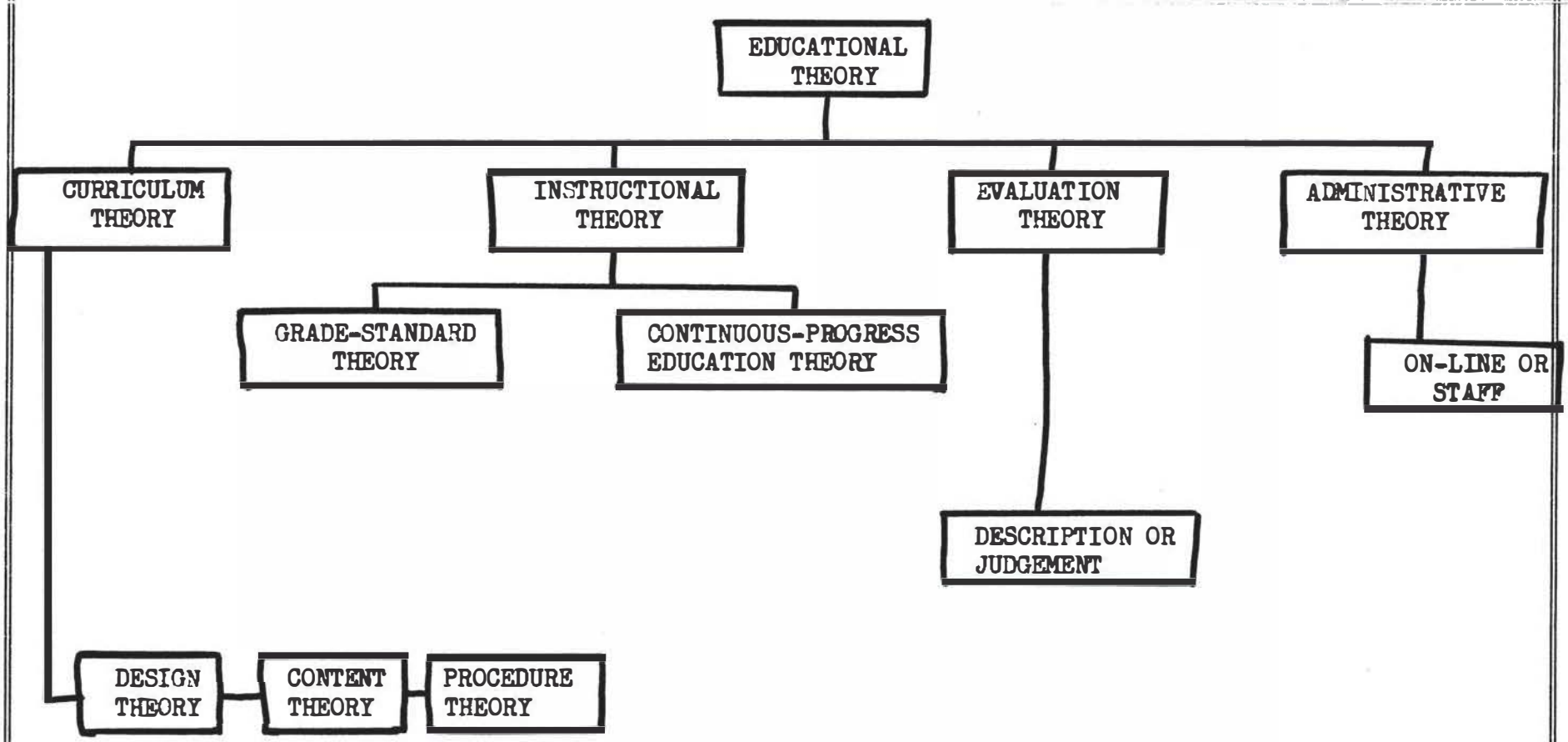
SEE ALSO: CURRICULUM THEORY, INSTRUCTIONAL THEORY, (SEE DIAGRAM)

ENTRY AND TERMINAL LEVELS OF BEHAVIOR: are inventories of student learning capabilities developed by educators (guidance counselors, educational psychologists, and teachers) before the instructional process occurs (entry level) and after instruction occurs (terminal level).[10] (See the diagram below)



By level is meant the inherent, observable, non-observable, potential, and future capabilities of the student to perform or learn new behavior skills, attitudes, etc. Behavioral objectives are designed according to entry and terminal levels.[11] The behavioral changes can be either acquisition or extension in nature (see behavioral change).

SEE ALSO: BEHAVIORAL OBJECTIVES, DIAGNOSTIC TEACHING, LEARNER TYPES

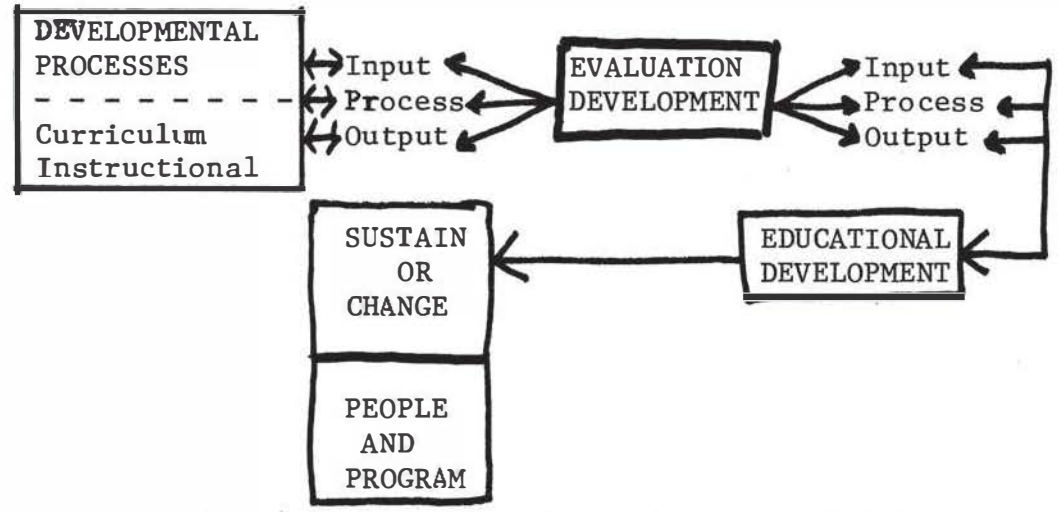


A BLOCK DIAGRAM LOCATING THEORIES AND SUB-THEORIES ASSOCIATED WITH EDUCATIONAL THEORY AS DERIVED FROM INFORMATION FROM CURRICULUM THEORY, SECOND EDITION, BY GEORGE A. BEAUCHAMP.[11]

Fig. 5

EPISODIC LEARNING: SEE LEARNING THEORY

EVALUATION DEVELOPMENT: as a sub-process of Educational Development (illustrated below) and described by James R. Nord (Audiovisual Instruction, December, 1971): Evaluation Development relates to Educational, Curriculum, and Instructional Development in a constant exchange of inputs and outputs (represented by arrows). Nord separated Evaluation Development (for convenience of discussion) and said that "...evaluation should be left to evaluation experts."[12] This is a somewhat idealistic and impractical approach for the typical school system, but through the use of evaluation expert writings (research and theories), commercially made tests, etc. the school system could effectively and indirectly make use of the experts. Evaluation of any process consists of examining and making value judgements about its success in fulfilling the prescribed goals, aims, or objectives. Output of an evaluation process appears in the form of directives to "...recycle, modify, or implement decisions."[13] This output can be transmitted through hardware, software, senseware, and people. It is always interpreted by people. The input (like output) can be transmitted through hardware, software, and senseware, but mostly by people. Input is generally in a form understood by people. The process of evaluation can be objective (quantatative-numerical) or subjective (affective-cognitive) in method and also includes the use of hardware, software, and chiefly people. A simple model of the Evaluation Development process is given below:



SEE ALSO: EVALUATIVE TOOLS/METHODS, EDUCATIONAL DEVELOPMENT, ACCOUNTABILITY, THE FIGURE 1, p.36.

EVALUATIVE TOOLS/METHODS: include numerical/measurable or non-testing devices. According to Oliver, "evaluation encompasses more than testing and measurement."[14] The instruments of measurement (numerical-testing or non-testing types) provide valuable tools for much of the data-gathering and...interpretation of what is found."[15] Non-testing devices could include "...questionnaires, rating and ranking scales, case studies, interviews, checklists, anecdotal records, sociometrics, diaries, recordings, and observations. These help in appraising rather than in measuring."[16] See Fig. 1, p. 36.

SEE ALSO: EVALUATION DEVELOPMENT

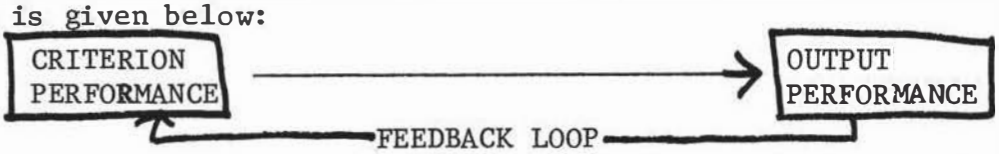
EXPERIENCE CURRICULU : according to Albert Oliver, major points describing the experience curriculum are: (1) centered on learners; (2) emphasis on promoting the all-around growth of the learners; (3) subject matter selected and organized cooperatively by all learners during the learning situation; (4) emphasis upon "variability" in learning experiences and results; (5) controlled and directed cooperatively by learners (pupils, teachers, parents, supervisors, others).[17] According to Virgil Herrick, the experience curriculum is planned by the children, the teacher, teaching staff, and even the community. "Curriculum planning, from the point of view of this conception (experience-based) is not something which is done before the learning takes place, but is an essential part of the learning process itself and must be carried on so long as learning or life persists..... Thus, curriculum planning is seen as a fundamental part of the development of a person, living and learning in a democratic society."[18]

SEE ALSO: CURRICULUM, CURRICULUM DEVELOP ENT, CURRICULUM SOURCES, KNOWLEDGE CURRICULU , EXPRESSIVE CURRICULUM

EXPRESSIVE CURRICULUM: Fenwick English described an expressive curriculum as aiming to produce diversity, surprise and new solutions and concepts to the total learning process. "Expressive connotes a criterion referenced educational plan where a range of outcomes or products may be specified in advance on a continuum of possibility ...."[19] An expressive curriculum provides for the development of individual student interests and motivates students into learning other related contents, skills, etc.[20]

SEE ALSO: EXPERIENCE CURRICULU , CURRICULU DEVELOPMENT, CONTINUOUS-PROGRESS EDUCATION

FEEDBACK PROCESS: "A process built into a system by which output performance is compared with criterion performance and by which the information about the adequacy of the performance of the system and about the adequacy of its output is communicated to the designer and/or manager of the system."[21] A schematic representation of a feedback loop is given below:



SEE ALSO: SYSTEM, SYSTEM PROCESS, SYSTE 'S APPROACH

GRADE STANDARD THEORY: Edwin Read discussed two educational theories, Grand-Standard Theory and Continuous-Pupil-Progress, both evolving from a combination of tradition and innovation. "...Grade-Standard-Theory is familiar to all.....Since the mid-eighteen hundreds, this theory has lent support to the graded school organization and its practices of non-promotion, common achievement standards for classmates, graded readers, and textbooks, graded curriculum, competitive marking, whole-class methods of instruction, and the employment of instructional media and learning materials which facilitate the dissemination of common information in concent to all class members."[22]

SEE ALSO: CONTINUOUS-PROGRESS EDUCATION, EDUCATIONAL THEORY, CURRICULUM THEORY, GROUPING METHODS/SYSTEMS

GROUPING METHODS/SYSTEMS: can be of two general types, Homogeneous or Heterogeneous. Homogeneous grouping would apply to a Grade-Standard school organization, where students are put together "en masse" and then divided into manageable sections. There is little consideration for individual differences. Heterogeneous grouping can apply to Grade-Standard as well as Continuous Progress organizations. It provides for the individual; e.g.'s are ability grouping, individualization of instruction, special education, groups, etc.[23] See Fig. 2, p. 43.

SEE ALSO: GRADE-STANDARD THEORY, CONTINUOUS PROGRESS EDUCATION, NONGRADEDNESS, HORIZONTAL ORGANIZATION, VERTICAL ORGANIZATION

HARDWARE: Nord established a working meaning of hardware and stated that it "refers to the physical equipment or tools used in any process (instructional, curriculum, evaluation development)." He also said that in being utilized through the various processes, hardware seems the "least changed".[24] Generally only minor adjustments due to normal use, are required. Often-times many more pieces of hardware are required to create or initiate a design are needed to maintain it. Most input hardware survives to become output hardware (at least in instructional development), but in evaluation and curriculum development input hardware often will not survive to become output hardware.[25]

SEE ALSO: EDUCATIONAL TECHNOLOGY, INSTRUCTIONAL DEVELOPMENT, CURRICULUM DEVELOPMENT, EVALUATION DEVELOPMENT, INSTRUCTIONAL MEDIA

HORIZONTAL ORGANIZATION: Neagley summarized horizontal school organization as serving "...the function of distributing the student body among the members of the teaching staff (according to the specialty of the individual staff members: subject content, teaching of the handicapped, etc.)..."[26] The following innovations are often utilized in a horizontal organization: (1) team teaching, (2) departmentalization, (3) self-contained classrooms, (4) individualized instruction, (5) pupil-team learning, and (6) ability grouping, etc.[27]

SEE ALSO: BLUEPRINT FOR LEARNING, VERTICAL ORGANIZATION, GROUPING METHODS/SYSTEMS

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INDEPENDENT STUDY: according to Linck "...is a broad form of self-instruction characterized by instructional programs whereby individual students become responsible for a significant portion of their learning without direct supervision, and for which school time and facilities are provided... (and) is based on the belief that students can and should be encouraged to be their own teachers." [1] An independent study program can "...more or less (be) tailored to fit in with the local curriculum" [2] and is closely related to individualized instruction. [3]

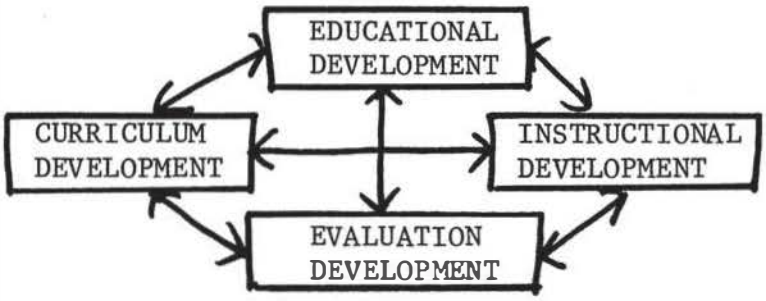
SEE ALSO: PROGRAMMED INSTRUCTION, CURRICULUM DEVELOPMENT

INDIVIDUALLY PRESCRIBED INSTRUCTION: SEE CONTINUOUS PROGRESS EDUCATION

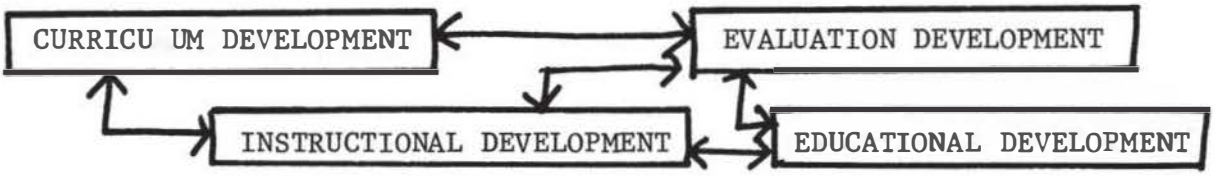
INNOVATIVE DIFFUSION CENTER: "The major role is to accelerate diffusion of innovative educational ideas among a faculty or staff." [4] With an up-to-date Innovative Diffusion Center (IDC) "...the adaptation time for worthwhile ideas (can) be reduced by making the appropriate materials (and information) readily available..." [5] "The integration of an (IDC) concept into a learning or instructional development model would require attention to facilities and location, staff, materials or information sources, and institutional support or constraints." [6]

SEE ALSO: EDUCATIONAL CHANGE, EDUCATIONAL CHANGE ADAPTATION/DIFFUSION

INSTRUCTIONAL DEVELOPMENT: as a sub-process of Educational Development (illustrated below) and described by James R. Nord, "Instructional Development---A Search for Meaning," AVI, Dec., 1971, "refers only to the process of accepting such inputs as 'the structured series of of intended learning outcomes' and converting them into such outputs as instructional materials, procedures to be followed by students and faculty, etc...Instructional Development is concerned with more of the psychology of how to teach and learn than with the sociology of what to teach and learn.... Instructional Development as used here means to presume an 'a priori' specified outcome and assumes a 'post priori' measurement or evaluation, all based on behavioral objectives." [7] Nord concluded that the total concensus of leading Instructional Developers is that their specific job involves the "process or how" of teaching and not the what (curriculum) or evaluation of teaching. Based upon the above premise, Instructional Development includes: (1) (Based upon curriculum decisions) the formulation of behavioral objectives; (2) Designing, production, selection, and utilization of instructional media; (3) selection, planning, implementation of teaching strategies. [8] Instructional Development as with Educational, Curriculum, and Evaluation Development makes use of input and output. These may be transmitted by hardware,



software, and senseware, and especially "people". Instructional Development is the "process" of bringing about Educational Change in the classroom of the system. It serves to fulfill the aims, goals and objectives of the total Educational Development/Change proposal. The simple diagram below describes the roll of Instructional Development:



INSTRUCTIONAL MANAGER: is a term designating the new role of the teacher in the classroom. He or She manages the teaching/learning process which occurs through the use of motivational devices, instructional media, and the total learning process. The teacher serves as a guide, resource, tutor, and counselor to the student, rather than the traditional authoritarian, all-knowing, center of the class.

SEE ALSO: SYSTEM'S APPROACH IN EDUCATION, PERFORMANCE CONTRACTING

INSTRUCTIONAL MEDIA: "devices or materials which represent a body of information and are largely self-supporting, rather than supplementary, in the teaching strategy and learning process."[9] Instructional media does not only include physical hardware or software in a technical sense but also includes a lecturer, textbook, fieldtrip, class visitor/demonstrator, or any "media" or "channel" of information. Instructional Media can be optional/enrichment or required in the instructional program.[10]

SEE ALSO: EDUCATIONAL TECHNOLOGY, INSTRUCTIONAL DEVELOPMENT, TEACHING/LEARNING STRATEGY, BLUEPRINT FOR LEARNING, HARDWARE, SOFTWARE, SENSEWARE

INSTRUCTIONA OBJECTIVE: According to Gerlach and Ely an instructional objective consists of "...a description of the changed behavior or product which indicates that learning has taken place...(and) should reduce ambiguity (of what is supposed to be learned) to a minimum... a good objective exhibits four distinguishing characteristics: (1)... describes something the learner does or produces; (2)...states a behavior or a product of learner's behavior; (3)...states the conditions under which the behavior is to occur; and (4)...states the standard which defines whether or not the objective has been attained."[11] Gerlach and Ely also listed five classes of objectives: (1) Identification type; (2) Naming type; (3) Descriptive type; (4) Ordering type; (5) Construction type.[12] The learner performs according to the type of activity given in the objective.

SEE ALSO: BEHAVIORAL CHANGE, BEHAVIORA OBJECTIVES

INSTRUCTIONAL TECHNOLOGIST: A professional who "...has the tools, the procedures, and the talents to implement major innovations in the educational system."[13] According to Locatis, the function of a

technologist "...is to construct a curriculum (program) that will enable (a) target population to achieve the general (educational) goals." He will work according to technological strategies: (1) Task analysis; (2) Implementation; (3) feedback, evaluation, and improvement.[14]

SEE ALSO: INSTRUCTIONAL TECHNOLOGY, CHANGE AGENT

INSTRUCTIONAL TECHNOLOGY: SEE EDUCATIONAL TECHNOLOGY

INSTRUCTIONAL THEORY: according to George Beauchamp, Instructional Theory is a sub-theory of Educational Theory and is equally important to Administrative, Counseling, and Evaluation Theories, but subordinate to curriculum theory. He also stated that "...research and the development of instructional theory need to be tied together."[15] Leaders of instructional development programs in educational systems "....are accepting the principle of scientific rigor as essential to theory building."[16] See Fig. 5, p. 61.

SEE ALSO: EDUCATIONAL THEORY, CURRICULUM THEORY

INSTRUCTIONAL VALIDATION PROCESS: "Validation is the process of determining inadequacies (of) instruction and revising it to eliminate the inadequacies. Interactive instruction is relatively easy to validate because the student's progress can be checked continuously. If the instruction is not effective at any point, it can be revised immediately...."[17] "The process of developmental testing, validation testing, and revision of instruction to be certain that the instructional intent is achieved."[18]

SEE ALSO: EVALUATION DEVELOPMENT, INSTRUCTIONAL DEVELOPMENT

INTERACTIVE INSTRUCTION: Is a teaching strategy in which two-way communication between learner and teacher (whether human, machine, or some form of media) is the channel or method of learning. The student is required to respond and is kept active at all times. Some advantages of interactive instruction are: students are kept active; progress can be determined at all times (by both teacher and learner); learner individual needs can be adapted to; immediate confirmation or correction can be made.[19]

SEE ALSO: CONTINUOUS-PROGRESS EDUCATION, COMPUTER-ASSISTED INSTRUCTION

INTERIM OBJECTIVE: "Temporary performance which aids the student in attaining the terminal performance requirement, but which is usually dropped after terminal criterion is reached."[20] See Fig. 3, p. 52.

SEE ALSO: BEHAVIORAL OBJECTIVES

KNOWLEDGE CURRICULUM: Is basically a curriculum planned and organized to teach certain attitudes, skills, and concepts of particular content-subject areas. Fenwick English described the expressive curriculum and knowledge curriculum as opposites, but capable of complementing each other in an educational system.[21]

SEE ALSO: EXPRESSIVE CURRICULUM, CURRICULUM, CURRICULUM DEVELOPMENT

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24. Ibid.
25. Bela Banathy: p. 89.

26. Ibid.

27. Brown/Lewis/Harcleroad: p. 27.

28. Gerlach/Ely: p. 43.

LEARNER TYPES: Is a system of diagnosing learners and grouping them into major learner-type groups.[22] Donald Britt wrote that "by establishing major groupings of learner-types an economical and effective means of developing individualized instruction programs are possible."[23] Test batteries, evaluative tools/instruments can be used in this diagnosis. The Instructional design can be formulated according to the needs of each major group.[24]

SEE ALSO: STUDENT DIAGNOSIS, STUDENT LEARNING PROFILE

LEARNING TASKS: "Specific bits of knowledge, skills and attitudes which the student has to master in order to be able to perform in the way described in the objective."[25] Analysis of learning tasks, according to Banathy, is a "...process by which the designer of an instructional system identifies the ....items to be learned as identified in the objective."[26]

SEE ALSO: BEHAVIORAL CHANGE, BEHAVIORAL OBJECTIVES, INSTRUCTIONAL OBJECTIVES

LEARNING THEORY: Brown, Lewis, and Harcleroad described three types of learning (the ABC's of the Teaching-Learning Process): (A) Knowledge and information; (B) Attitudes and appreciations; and (C) Skills and performance.[27] These are very general and recent research in learning theory have expanded the field into a science closely related to psychology. Gerlach and Ely considered learning as synonymous with behavior change. Behavioral objectives state how and under what conditions behavioral changes will occur. They can be either acquisition or extension in nature.[28] (See Behavioral Change) Learning Theory is an aspect of the educational development and change process which must be considered in any planning decisions.

SEE ALSO: BLUEPRINT FOR LEARNING, AFFECTIVE DOMAIN, COGNITIVE DOMAIN, OPEN/CLOSED EDUCATIONAL SYSTEMS

NONGRADEDNESS: Gerlad Ubben stated that "the philosophy of nongrading as a means of individualizing instruction is sound. Basically it breaks down the 'graded lockstep' structure of (traditional) education by providing for a continuous progress concept of curricular organization allowing for differentiated rates of progress for each individual child and also for variations in the curriculum for different children."[1]

SEE ALSO: CONTINUOUS-PROGRESS EDUCATION, GRADE-STANDARD THEORY

OPEN/CLOSED EDUCATIONAL SYSTEMS: Anderson described each type of system as opposing each other: An open system-accepts "...uniqueness in perception and thinking" through such instructional strategies as seminars, discussions, term papers, original student experiments or projects and permits originality, experimentation and invention. A closed system - has a main interest the acquisition of a body of knowledge using such instructional methods as rote-memory and encourages conformity and resistance to change. Open systems are subject to change if its effectiveness will be improved.[2]

SEE ALSO: EDUCATIONAL CHANGE, LEARNING THEORY

OPERATIONAL OBJECTIVES: According to Kenneth Sutton of Eastern Illinois University are a type of objective which differ from behavioral objectives in that they can allow some general and less-measurable results to occur. They are "claims of results that can be observed--that are public signs of attainment of the general aim."[3] They do not have to specify exact quantities, but must not repeat the program description (goals and aims).

SEE ALSO: THE INTRODUCTION FLOW CHART, BEHAVIORAL OBJECTIVES

PERFORMANCE CONTRACTING: G. H. Voegel wrote, "accountability and performance contracting are the latest wave of innovation on the educational scene."[4] He also said that "one of the basic concepts (of Performance Contracting) is that the instructional or learning process within an institution should be required to produce certain levels of student performance.... To create instructional management capabilities within the classroom, teachers will need to be retrained in attitude, as well as technical proficiencies; and incentives, in many cases, will have to be provided for the new classroom manager to help children achieve as much as possible, given time and cost restraints... In addition, it has been predicted that the teacher would become a manager, rather than a presentor of information and that school systems will be forced to become more flexible over the next decade, adopting curricula more relevant to student needs."[5] The performance achievement required could be measured or determined by use of a "...student achievement index or ratio," such as: "X percent of the students achieve 90 percent of the objectives on exams or performance assessment," or "Give a pre-test score of 60 after X amount of instruction a student scores 85," etc.[6] Performance contracting goes hand-in-hand with individualized instruction, continuous-progress education and accountability. It is another field which is so broad and so important that it deserves its own manual.

SEE ALSO: ACCOUNTABILITY, EVALUATION DEVELOPMENT, CONTINUOUS-PROGRESS EDUCATION

PROCESS-CENTERED CURRICULUM: Cecil Parker and Louis Rubin stated that "The requirements posed by a process-based curriculum deal primarily with the identification of worthwhile processes to which students should be exposed, the design of instructional strategies that make effective use of the processes, and the realignment of subject matter so that it complements the instructional strategies. Each of the requirements must be the product of pointed research and field testing, each must have roots in theory and function, and each must reflect the character of the discipline, or disciplines under which it operates."[7]

SEE ALSO: CURRICULUM, CURRICULUM DEVELOPMENT, SUBJECT CURRICULUM

PROGRAMMED INSTRUCTION: Programmed instruction is a method or strategy which is so big and broad that it deserves a manual of its own (see introduction to manual). Brown, Lewis and Harcleroad in their summary

of the chapter on "Programmed Instructional Materials" (Chapter Five) described the field as "...a multifaced development of the past ten years that has had marked influence on instruction." They also stated that "...perhaps the most significant contribution of the programmed instruction movement is a process--a way of thinking about learning. Emphasis is upon student learning, not upon teaching; upon having students meet standards of performance described as behavioral objectives."[8] Brown, Lewis, and Harcleroad in their summary also connect the relationship of programmed instruction to the system's approach to education.[9] Programmed instruction can be very simplified in nature (workbook or booklet form) or can be very complicated and technological involving large computers and their related terminal hardware. Regardless of the degree of complexity, the main aspect is the program (software). The quality and effectiveness of the programmed instruction unit will be a direct result of the quality and effectiveness of the program writer. The human element remains the main element as with any traditional instructional method. There are many components to a programmed instruction development including, according to Brown, Lewis, and Harcleroad: (1) Program development (writing of program based on establishment of goals, objectives and specific behavioral objectives); (2) Programmed materials (selection, adaptation, implementation, feasibility and practicality, effectiveness, evaluation); (3) Program process development (degree of complexity, linear, branching, degree of individual student adaptability); (4) Implementation of the development in the school. Programmed instruction could work in either a Grade-standard theory or Continuous-progress education school organizational system."[10]

SEE ALSO: COMPUTER-ASSISTED INSTRUCTION, BEHAVIORAL OBJECTIVES, TEACHING STRATEGY/METHOD, GRADE-STANDARD THEORY, CONTINUOUS-PROGRESS EDUCATION

PSYCHOMOTOR DOMAIN: Gerlach and Ely defined psychomotor domain as "...pertaining to the manipulative or motor skill area."[11] "These kinds of tasks are referred to as skills by some writers. Others call them 'motor' or 'psychomotor' tasks."[12] Motor skills involve physical neuro-muscular training and development so that the student can perform in a coordinated and effective manner.[13]

SEE ALSO: PSYCHOMOTOR OBJECTIVE, BEHAVIORAL CHANGE, BEHAVIORAL OBJECTIVES

PSYCHOMOTOR OBJECTIVE: according to Krathwohl, Bloom, and Masia are statements of behavior change "...which emphasize some muscular or motor skill, some manipulation of materials and objects, or some art which require a neuromuscular coordination.... Such objectives ...(are) most frequently related to handwriting and speech and to physical education, trade, and technical courses."[14]

SEE ALSO: PSYCHOMOTOR DOMAIN, BEHAVIOR CHANGE, BEHAVIORAL OBJECTIVES

REINVENTION THEORY OF LEARNING: SEE COGNITIVE CONFLICT LEARNING THEORY

SCHOOL ARTICULATION: Described by Albert Oliver as referring "... to a concurrent relationship between at least two elements, rather than to the subsequent relationships implied in a continuity.... Members of the curriculum structure (teachers, media specialists, administrators, etc.) must be properly integrated to insure their best operation."[15] The relationships between subject matter must be integrated, as well as the relationship of learned material to everyday life experiences. Oliver described a total articulation of school life, home life, community life, post-school life, and future life (of the student).[16]

SCIENTIFIC APPROACH/METHOD OF DEVELOPMENT: according to Brudner, "In the past decades, the groundwork has been developed for a major integration of our science and technology with all areas of education (theory and processes)."[17] The system's approach to educational development and its sub-processes (curriculum, instructional, and evaluation development) should be based on the scientific approach and method. Educational theory and its sub-theories should also be based on a scientific method of development.[18]

SEE ALSO: SYSTEM'S APPROACH TO EDUCATION, EDUCATIONAL THEORY, CURRICULUM THEORY, INSTRUCTIONAL THEORY, EDUCATIONAL RESEARCH

SENSEWARE: Nord labeled such concepts as performance criteria, measures of performance, strategies, decision rules, voting procedures, organizational principles, and authority patterns as senseware. They pertain to the senses in doing anything and involve a sense-human-sense reaction to their design and execution. Senseware is associated with software and hardware, as well as with reactions of man-to-man, man-to-machine, and machine-to-machine. Senseware is chiefly centered around the "people" aspect of any process.[19]

SEE ALSO: SOFTWARE, HARDWARE, EDUCATIONAL DEVELOPMENT

SEQUENTIAL LEARNING: A theory of learning which involves the planning of meaningful learning experiences "in sequence" to achieve the best learning results. It relates closely with the knowledge curriculum and the system's approach to development.[20]

SEE ALSO: INSTRUCTIONAL DEVELOPMENT, CONTINUOUS-PROGRESS EDUCATION APPROACH, SYSTEM'S APPROACH TO EDUCATION

SEVEN CARDINAL PRINCIPLES OF EDUCATION: According to Hilda Taba, "The Cardinal Principles of Secondary Education stated the chief aim of education as follows: The purpose of democracy is so to organize society that each member may develop his personality primarily through activities designed for the well-being of his fellow members.... There were Seven Cardinal Principles: (1) health; (2) command of fund processes; (3) worthy home-membership; (4) vocation; (5) citizenship; (6) worthy use of leisure; (7) ethical character. "These principles actually only described the areas of life-activity which should be of concern to educators, but did not elaborate the behaviors needed to attain these ends."[21] Behavioral objectives stated in specific terms can serve to fulfill the Seven Cardinal Principles.

SEE ALSO: EDUCATIONAL DEVELOPMENT, SOURCES OF CURRICULUM, BEHAVIORAL OBJECTIVES

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19. James R. Nord: pp. 11-17.
20. Paul A. Scholl: pp. 18-20.
21. Hilda Taba: p. 207.
22. John O. Bolvin: pp. 828-831.
23. Ibid.
24. Ibid.

25. Hilda Taba: pp. 232-249.

26. Hilda Taba: pp. 263.

27. Ibid.

28. George H. Voegel, "Accountability and Performance Contracting": pp. 16-17.

SOFTWARE: Defined by Nord as "...the co-function of hardware. It is the metaphysical tool used in any process, the concepts, ideas, principles, techniques, generally transmitted through some hardware or physical equipment."[22] Software always requires an interpreter to generate meaning.

SEE ALSO: HARDWARE, SENSEWARE

STUDENT DIAGNOSIS: as described by John Bolvin, student diagnosis can be utilized in developing continuous-progress education programs or in establishing specific instructional objectives (the student must undergo a complete learning diagnosis). "Detailed diagnosis is made of the initial state with which a learner comes into a particular instructional situation.... The diagnosis of the initial state should include not only assessment of learner's knowledge of prerequisite behavior but also the assessment of his aptitudes, his learning style preferences, and his perceptual and motor skill capabilities."[23] This long-term accumulated diagnosis must especially apply to his current instructional step placement.[24] Immediate predictors of success do not necessarily equal long range determination. Hilda Taba discussed student diagnosis as being concerned chiefly with: (1) determining the educational needs of children; (2) conditions of learning in the classroom; (3) factors that affect optimum achievement of educational objectives.[25] Taba listed nine informal diagnostic devices; as: (1) open-ended classroom interview; (2) open-ended questions and themes; (3) unfinished stories and incidents; (4) records of discussion; (5) records of reading and writing; (6) observation and recording of performance; (7) observation and recording of performance; (8) special assignments and exercises; (9) sociometric tests; (10) devices for diagnosing the out-of-school environment.[26] "A broad scope of diagnosis is needed to develop effective curriculum."[27]

SEE ALSO: LEARNER TYPES, STUDENT LEARNING PROFILE

STUDENT LEARNING PROFILE: Voegel defined a student learning profile as a "blueprint" of the learning capabilities of a student usually developed by a counseling or student-development group (specialists in learning theory, etc.). Establishing a student learning profile is the first step in a system's approach to learning such as performance contracting, etc. Defining a learning profile for each student (could) be a major determinant in writing objectives and specifications.[28]

SEE ALSO: LEARNER TYPES, PERFORMANCE CONTRACTING, DIAGNOSTIC TEACHING, STUDENT DIAGNOSIS

SUBJECT CONTENT: According to Parker "...is a rhetoric of conclusions to be transferred to the student."[1] According to Banathy, content has two meanings: (1) its broader meaning implies the sum of all its parts that make up a system; (2) content as an aspect of curriculum means elements of knowledge, skills, processes, and attitudes which are selected and organized and then presented through learning experiences to the student. The acquisition of content enables the student to perform in the manner described by the instructional objective.[2]

SEE ALSO: SUBJECT CURRICULUM, CURRICULUM CORRELATION, KNOWLEDGE CURRICULUM, SCHOOL ARTICULATION

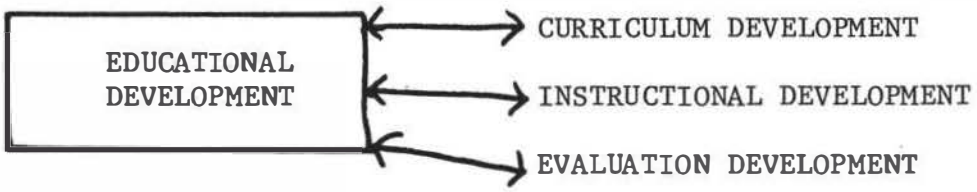
SUBJECT CURRICULUM: Albert Oliver compared a Subject Curriculum to an Experience Curriculum by describing their respective differences in "emphasis." Major points describing the Subject Curriculum were: (1) centered in subjects; (2) emphasis upon teaching subject matter; (3) subject matter selected and organized before the teaching situation; (4) emphasis on teaching specific facts, skills, subjects; (5) education (learning) strictly controlled by an authority (teacher, or someone external to actual learning process).[3]

SEE ALSO: CURRICULUM, CURRICULUM DEVELOPMENT, SUBJECT CONTENT, KNOWLEDGE CURRICULUM

SUBOBJECTIVE: a description of "...performance that is part of a larger terminal objective and appears as part of the terminal performance. Subobjectives appear when large sequential tasks are involved. The primary difference between subobjectives and interim objectives is that subobjectives appear as part of the terminal performance, while interim objectives serve a temporary purpose."[4]

SEE ALSO: BEHAVIORAL OBJECTIVES, INTERIM OBJECTIVES

SYSTEM'S APPROACH TO EDUCATION: The system's approach to any process is the application of a system in determining all the aspects of the process. Nord's theory of Educational Development is in a sense a general system's approach.[5]



A system is composed of components which work together in a common process to obtain certain designated results. The process of the Educational Development Model is constant interchanging of inputs and outputs, varification and improvement of results (represented by arrows). Each sub-process, Curriculum, Instructional and Evaluation Development are complete systems within theirselves.[6] Curriculum Development: According to Cyrs and Lowenthal, "a system's approach to curriculum development is a rational problem solving method of analyzing the educational process and making it more effective.... The system is this process taken as a whole, incorporating all of its parts and aspects including the students, the teachers, the curriculum content, and the instructional materials, the instructional strategy, the physical environment and the evaluation of instructional objectives."[7] (See also behavioral change) Instructional Development: Hilda Taba (see the introduction), Harlan Douglas, Gene Faris and many educational theorists have developed step-by-step procedures for a system's approach for Instructional Development. (See Instructional Development) Bela Banthy wrote a book, Instructional Systems, 1968, which clearly defines the various components, processes, and methods of the use of the System's Approach for Instructional Development. Evaluation Development: requires a less complicated system's approach (see Evaluation Development) but does have components which work together to fulfill the prescribed purposes.

Fig. 6

A GUIDE TO UNDERSTANDING THE SYSTEM'S APPROACH TO INSTRUCTION:
(Based on a theory by Bela H. Banathy, INSTRUCTIONAL SYSTEMS,[8]

I.	An ANALYSIS OF SYSTEMS: "...can be defined as deliberately designed synthetic organisms (made-made), comprised of interrelated and interacting components which are employed to function in an integrated fashion to attain predetermined purposes."[9] Understanding a system's purpose is the best way to understand one. This leads to _ _ _ _
II.	AN UNDERSTANDING OF THE SYSTEM'S CONCEPT: "Systems are assemblages of parts that are designed and built by man into organized wholes for the attainment of specific purposes. The purpose of a system is realized through processes in which interacting components of the system engage in order to produce a predetermined output."[10] This can lead to _ _ _ _
III.	A SYSTEM'S VIEW: "A way of thinking, by looking at man-made entities as systems, as assemblages of parts which are designed and built into an organized whole for the accomplishment of a specific purpose."[11] If applied, this leads to _ _ _ _
IV.	THE SYSTEM'S APPROACH: "Common sense by design. A self-correcting and logical methodology of decision making to be used for the design and development of man-made entities. Component strategies of this methodology include the formulation of performance objectives, the analysis of functions and components, the distribution of functions among components, then scheduling, the training and testing of the system, installation, and quality control."[12]

TEACHING ACT: according to Costa "....a basic component...is a clearly defined operational objective stated in behavioral terms. These objectives must then be arranged into a hierarchy of complexity so that "simpler behaviors" are acquired before the more sophisticated ones. The classroom situation and teaching act could be considered a curriculum "in miniature."[13] Oliver compared general Curriculum Improvement and the Teaching/Learning Situation. They had the following points in similarity: (1) both included cooperative planning activities; (2) both involve group processes; (3) both are based on goals and objectives; (4) both require articulation; (5) both are flexible; (6) both use research.[14]

SEE ALSO: INSTRUCTIONAL OBJECTIVES, TEACHING STRATEGY, CURRICULUM DEVELOPMENT

TEACHING SPECIFICATIONS: according to Neagley specifications for teaching facilities and methods can have a strong influence upon curriculum development, or instructional development. Specifications and planning go hand in hand and should be considered carefully in detail.[15] The Blueprint for Learning describes such specifications.

TEACHING STRATEGY: Defined by Bruce Joyce as referring "...to the design of an educational process or environment, and consists of specifications of the means that are to be used to achieve some educational goal."[16] As applied to a system's strategy means the "...components of the total process of system's design, development, management."[17] Joyce described several ways teaching strategies are used: (1) in curriculum planning and organization; (2) to guide the behavior of teachers as they interact with students and serve as models for units or lessons; (3) used to shape instructional materials or systems that use media and personnel to reach their goals.[18]

SEE ALSO: TEACHING ACT, INSTRUCTIONAL DEVELOPMENT

TERMINAL OBJECTIVE: is an objective which "...refers to the behavior you would like your learner to be able to demonstrate at the time your (the teacher's) influence over him ends."[19]

VALUE JUDGEMENTS: "Values held by society, the community, curriculum workers, (other educational development specialists), and classroom teachers in particular determine the purposes, objectives, and outcomes of the school curriculum (and instructional program)."[20] Each educational professional as well as each student has to make value judgements on their own self-performances and peer-group performances, expectations, desires, etc.

VERBAL INTERACTIVE BEHAVIOR: Lynn Miner said, "It is recognized that the stimulus, examiner, subject, language measure (all inputs) and resulting interactions are all recognized variables in the assessment of expressive language ability (verbal output) in children.... Different visual stimuli are the source of considerable variability in analyzing the verbal output of the children."[21]

SEE ALSO: BEHAVIORAL OBJECTIVES, VISUAL LITERACY

VERBAL OBJECTIVE: "involves the ability to write or describe orally"[22] and follows the same rules and methods of construction as other behavioral objectives.

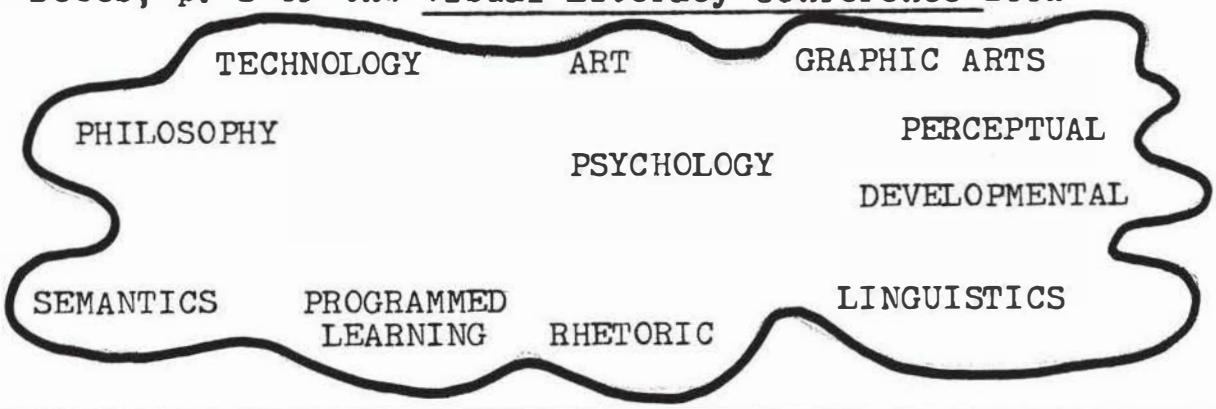
SEE ALSO: BEHAVIORAL OBJECTIVES, VERBAL INTERACTIVE BEHAVIOR

VERBAL PERFORMANCE: SEE VERBAL OBJECTIVE, VERBAL INTERACTIVE BEHAVIOR

VERTICAL ORGANIZATION: Neagley summarized the two basic plans of school organization: vertical organization is concerned with the classification of pupils (and) their movement 'upward' from admission to departure. The following schemes are included under vertical organization: (1) grading; (2) multi-grading and (3) non-grading.[23]

SEE ALSO: BLUEPRINT FOR LEARNING, HORIZONTAL ORGANIZATION, OPEN/CLOSED EDUCATIONAL SYSTEMS

VISUAL LITERACY: Debes' definition said: "Visual literacy refers to a group of vision competencies a human being can develop by seeing at the same time he has and integrates other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, and/or symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication."[24] "A theory of visual literacy includes processes determined by visual and nonvisual perception, by personal and social cognition, and by symbolic and nonsymbolic behavior."[25] A model of visual literacy by Ostwald is: (1) Processing of visual information gives an immediate and fast appraisal of reality; (2) Information from additional (i.e. nonvisual) sensory inputs influences the evaluation of that appraisal; (3) Personal life experiences, stored in memory, determine how this total sensory appraisal of reality is to be interpreted; (4) social rules govern any behavior which is engaged in as a consequence of these interpretations; (5) Symbol systems control ways in which this behavior is to be communicated to people removed in space and time.[26] The illustration below describes the vast "Parameters of Visual Literacy" by John Debes, p. 2 of the Visual Literacy Conference Book[27]



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