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AUTHOR McCleary, Lloyd E.; McIntyre, Kenneth
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ABSTRACT

This article is an attempt to assist professors of school administration in the planning of their instructional activities. Its purpose is to present a planning framework by which the type and level of learning desired can be matched with the most appropriate, feasible, and effective processes for attaining that learning. A model is presented for a "Competency Based Curriculum." The model includes a competency dimension classified primarily as technical, conceptual, or human; levels of competence to be attained (familiarity, understanding, or application); and the content (subject matter) and processes (methods) to be employed to develop the competency specified. The authors stress that in applying the model, the identification of competencies must include the active participation of practicing school administrators if competencies are to be relevant and properly analyzed into their component parts. The final section of the article examines the applicability of current instructional methodologies to the competency based curriculum model. (Authors/WM)

Competency Development and the Methodology of College Teaching: A Model and Proposal

Lloyd E. McCleary and Kenneth McIntyre

This article is an attempt by the authors to assist professors of school administration in the planning of their instructional activities. Simply stated, its purpose is to present a planning framework by which the type and level of learning desired can be matched with the most appropriate, feasible, and effective processes for attaining that learning. Before presenting our model, a few preliminary statements might be in order.

Development of rational approaches to curriculum design has met with serious difficulties over such issues as content versus process emphasis, prescriptive versus discovery (or other type) learner involvement, learner behavioral versus teacher objectives, and degree of specificity of curricular prescription (from "teacher free" lesson plans to open-ended "resource" units).

Despite the movement toward highly specific, teacher-free learning packages and the use of behavioral objectives, the evidence is not clear-cut relative to any issue within the curriculum concerns noted above. Major difficulties arise from lack of careful definition of the variables entering into the teaching situation, problems due to intervening variables, and the lack of valid research and evaluation designs.

In spite of the difficulties noted above, certain assumptions seem to be well substantiated:

1. Learning is effective when the things to be learned are clearly specified; when the learner understands what is to be accomplished and accepts it as reasonable and worthwhile; when the prerequisite knowledge and skills are known and the learner possesses them or can attain them with reasonable effort; and when the level of performance of what is to be learned is understood by learner and teacher.

2. Teaching is effective when content (technical skills, conceptual understanding and/or human factors) is identified and inter-related so that the elements needed to achieve a given level of performance are known; when content is ordered into a "continuum" that carries the learner as far as necessary along a sequence of experience (from familiarity to understanding to application.); when the content and process is ordered so that each learner can progress along the continuum at his own rate (individualization); and when the methods of instruction (processes) are appropriate to the nature of what is to be learned (content) and to the level of achievement desired.

One model was designed and is now being tried out that portrays how these assumptions might be taken into account in order to construct a "Competency Based Curriculum" and identify appropriate processes, at predetermined levels of competence, along a learning continuum. The model is shown in Figure 1.

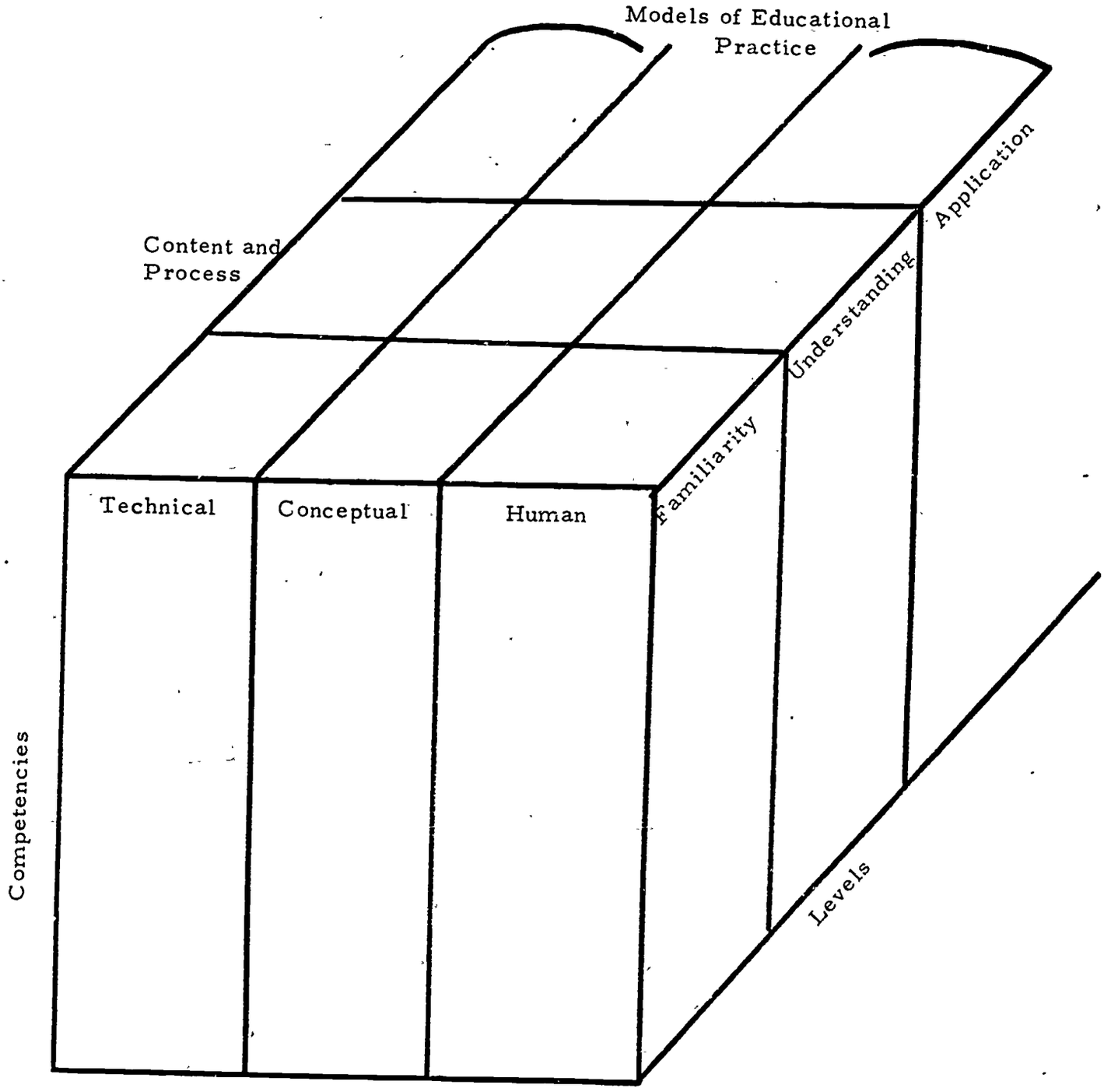
The model includes 1) a competency dimension classified primarily as technical, conceptual, or human; 2) specified by levels of competence

to be attained--familiarity, understanding, or application, and 3) the content (subject matter) and processes (methods) to be employed to develop the competency specified. For illustration: A competency in instructional supervision is the use of at least one interaction analysis technique to assess teaching effectiveness. The interaction analysis technique selec ed might be that of Flander's ten category rating scheme (content).

Competence with this interaction analysis technique requires technical skills of rating at a satisfactory level of reliability (approaching .85), memorization of the ten interaction categories, their recognition in a teacher-pupil exchange during the conduct of a lesson, and the preparation and interpretation of a matrix. Competence also requires conceptual knowledge of the assumptions underlying the technique, the limitations of the technique, adaptations that can be made of it, etc. Competence also requires human skills the supervisor might need in using this technique with teachers.

In achieving a satisfactory level of competence supervisors would first need to become familiar with interaction analysis. They would need to learn the ten categories; practice recognizing and classifying with tapes or films that permit stopping to discuss specific teacher-pupil exchanges that exemplify each category, read descriptions of the technique and the results of its use, etc. Each category--technical,

FIGURE I: THE GENERAL MODEL FOR A COMPETENCY BASED CURRICULUM



conceptual, and human--would have appropriate experiences at the level of familiarity and with appropriate processes (methods) to attain a satisfactory level of familiarity.

At the understanding and application levels, the same would be true. At the understanding level, students might be required to demonstrate ability to rate pupil-teacher verbal exchanges, practice preparing matrices of results, role play use of data collected in teacher-supervisor conferences, and the like. At the application level students might go into a classroom and carry out the technique and use it with teachers; they might prepare T.V. tapes of their own teaching, apply the technique, and write up the results. As sketchy as this illustration is, it should be clear the model can be used to specify a curriculum in the three dimensions identified by the model and satisfy the assumptions identified.

Problems and issues in constructing a competency based curriculum are being identified and studied. They range from concern about the activities to be employed to measure learning at the application level to the need to identify "molar" problems and simulate them such that the student can respond in "clinical" fashion and reveal whether or not he would actually select and employ a particular competency.

In the application of the model presented, certain curriculum problems have become more clear. The identification of competencies must include the active participation of practicing school administrators if they are to be relevant and properly analyzed into their component parts.

The place of behavioral objectives and the specification of performance standards no longer present difficulties as they assume a logical place in curriculum construction. The measurement of competencies becomes more meaningful and fits naturally into the sequence of instruction. Also, it is becoming apparent that curriculum assessment and revision can become a continuous process rather than a major project of overhauling courses and course sequences. There is the possibility that the traditional course structure will simply cease to exist as needed competencies are identified for a given student, and he proceeds on an individualized basis.

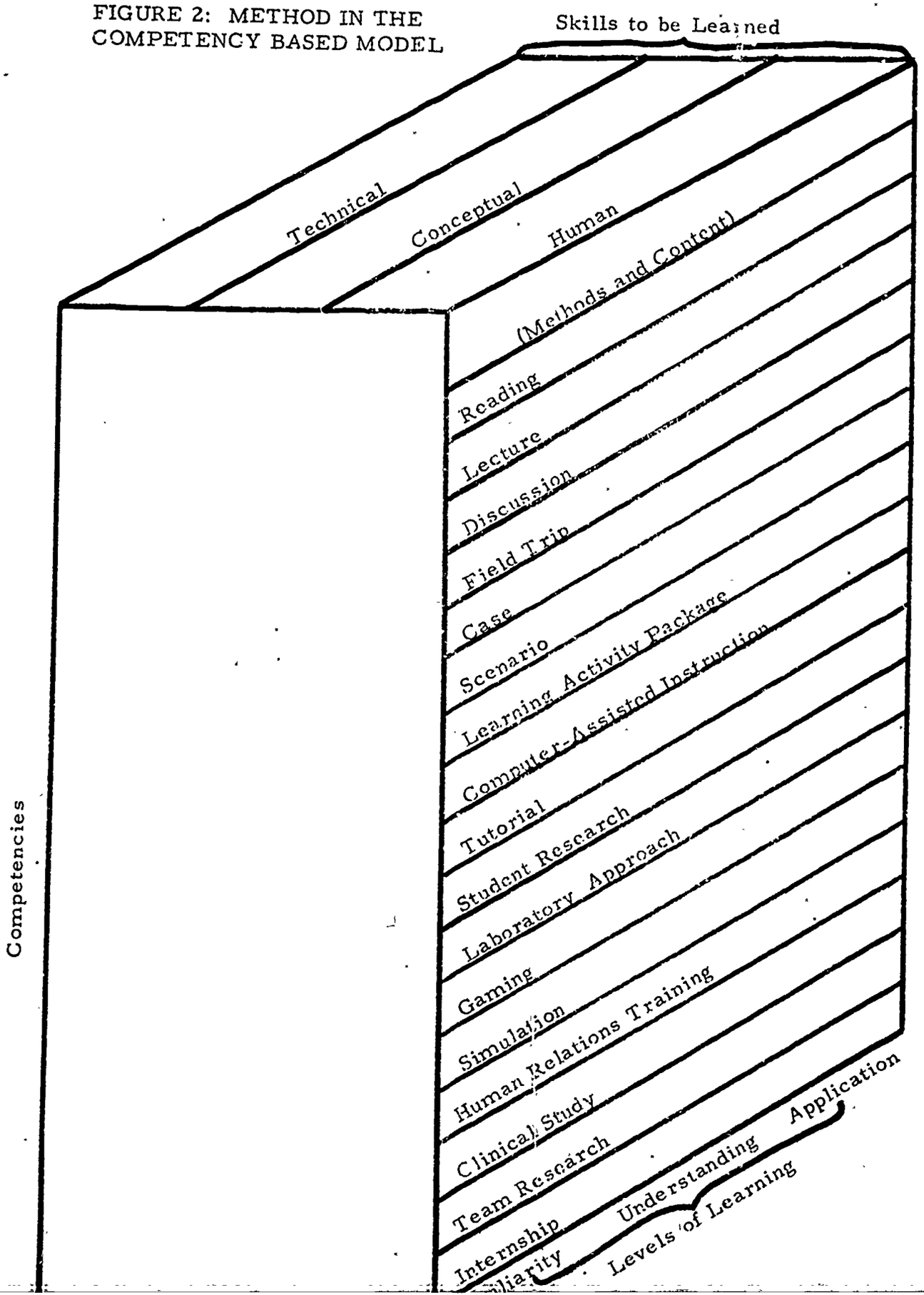
The final section of this article relates to the tailoring of instructional methodologies to the competency based curriculum model. The methods available to conduct instruction require particular attention because of the demand for much different approaches to teaching. Therefore, a review of current methods of instruction and what is known about them is given below. It is presented in chart form in order to condense a large amount of information as concisely as possible.

Methods of Instruction and Their Place in the Model

Returning to the general model (given in Figure I) it is now appropriate to enter the known methods of instruction available to the instructor and student. Figure 2 indicates 17 methods that are sufficiently descrete to permit definition and evaluation. Again, competencies need to be identified and specified in terms of their technical, conceptual, and

human components. At this point specific measurable objectives can be stated at the appropriate level of learning desired (familiarity, understanding, and application), and the content and methods selected for instruction. The authors suggest that the model permits, perhaps for the first time, the "fine tuning" of method to specified learning requirements--a condition notoriously absent in much of higher education where lecture or contrived laboratory methods are frequently the only methods employed regardless of the competency to be developed.

FIGURE 2: METHOD IN THE COMPETENCY BASED MODEL



Although the effectiveness of any method depends on many subtle factors in the situation, we can appraise methods in general with respect to their appropriateness for achieving different types and levels of objectives, as indicated in Figure 3.

FIGURE 3: APPROPRIATENESS OF METHODS FOR TRAINING SCHOOL ADMINISTRATORS, WITH RESPECT TO LEVELS OF LEARNING AND SKILLS TO BE LEARNED

	Levels of Learning			Skills to be Learned		
	Familiarity	Understanding	Application	Technical	Conceptual	Human
Reading	High	Med.	Low	Low	Med.	Low
Lecture	Med.	Med.	Low	Low	Med.	Low
Discussion	Med.	Med.	Low	Low	Med.	Low
Field Trip	Med.	Low	Low	Low	Med.	Low
Case	Low	High	Low	Low	High	Low
Scenario	Low	High	Low	Low	High	Low
Learning Activity Package	Low	High	Low	Low	High	Low
Computer-Assisted Instruction	Low	High	Low	Low	High	Low
Tutorial	Low	Med.	Low	Low	Med.	Low
Student Research	Low	Med.	Low	Low	Med.	Low
Laboratory Approach	Low	High	Med.	Med.	High	Med.
Gaming	Low	High	Med.	Med.	High	Med.
Simulation	Low	High	High	High	High	Med.
Human Relations Training	Low	High	High	High	High	High
Clinical Study	Low	High	High	High	High	Med.
Team Research	Low	High	High	High	Med.	Low
Internship	Low	Med.	High	High	Med.	Med.

High, Medium, Low = Extent to which the method, when competently employed, tends to be practical and effective in learning the designated skills at the levels desired.

The methods in Figure 3 are listed in sequential clusters that suggest relative emphases at different times in a trainee's preparation. Reading, lectures, discussions, and field trips, for example, might be relatively more appropriate at the early stages of a student's training, when familiarity with a broad array of content is desirable. He might next concentrate on activities that can produce conceptual skills at the understanding level, such as the use of cases, scenarios, learning activity packages, CAI programs, tutorial instruction, and student research. Then he could well become increasingly immersed in job-like activities that tend to be high in effectiveness in producing conceptual skills at the understanding level and also reality oriented, such as laboratory training exercises, gaming, simulation, and human relations training. Finally, his training might culminate in an increasing emphasis on those activities that are most likely to produce technical skills at the application level, such as clinical studies, team research, and internships.

Obviously, this suggested sequence is only suggestive of relative emphases and not prescriptive. Most of the methods that were cited as being most appropriate at the beginning of one's preparation when familiarization is the paramount instructional goal--such as reading, lectures, and discussions--would still be appropriate for certain purposes in the latter stages of a student's program. The point is that certain kinds of instructional activities tend to be more productive at different stages in a program.

The key question for the professor, however, centers on the method or methods that he might best employ in teaching toward a specific objective. Here the information presented in Figure 4 might be useful. The 17 methods are again presented, together with very brief definitions, summary statements concerning the research on each method, the major strengths and weaknesses of each one, and a general appraisal statement on each one. Those who desire a more complete analysis, particularly of some of the less familiar methods, might want to study some of the references listed at the end of this article.

FIGURE 4: METHODOLOGIES OF COLLEGE TEACHING*
A PRELIMINARY REVIEW

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Lecture	Inconclusive; not many studies recently	Can be used effectively to stimulate interest, explain difficult ideas, summarize, or synthesize; economical	Little if any feedback; learner is passive; student lectures (in form of reports to class) are often boring and ineffective	Can be useful for certain purposes, but used far too much and too indiscriminately to achieve purposes illsuited to the method
Discussion	Inconclusive, partly due to imprecise definition of the term, except that student-centered (in contrast with instructor-centered) techniques found to be superior in almost all studies	Provides opportunity for students to learn from each other as well as from instructor; flexible; students can be active learners	Often suffers from lack of planning, focus, and purpose	Can be productive, but must be well planned to yield hoped-for-results; like the lecture method, this one is undoubtedly used too indiscriminately

*References upon which commentary is based, are appended.

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Case	Very few evaluative studies reported; evidence tends to support the use of the case method for appropriate purposes	Can provide interesting and realistic material for wide range of theoretical analyses; cases plentiful, including some on tape and film; economical	If discussion is not led well, can be fruitless exchange of opinions	Can be effective method if discussion is expertly led, particularly for developing analytical skills
Scenario**	No known studies	Realistic; versatile; inexpensive	Effectiveness depends upon skill of instructor--as with case method, could be simply a sharing of opinions	Can provide realistic context for variety of activities, including role playing and small group problem solving

**Scenario refers to a set of materials, usually descriptive as in a scenario, that establishes the situational context within which all the constructs and principles are introduced and dealt with it can lead to role playing, group problem solving, etc.

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Independent Study	Inconclusive; according to one study, effectiveness lies largely in covering of factual content	Adaptable to individual needs; economical	Except in the case of programmed texts, which are rare in educational administration, learner has no opportunity to interact with learning material	If adequate reading (or other) materials available, and if guidance provided in selection of materials, can be economical way for individual to acquire information not otherwise available
Student Research	Most active researchers in education received highest degrees in only ten universities; most education graduates publish no research in ten years following receipt of degree	Ideally, provides means of student's learning by doing while also contributing to professional knowledge; adaptable to individual needs	Consumes much student and faculty time, usually for dubious results	If production of researchers is a major objective, then method is largely ineffective; can be useful and productive means of preparing students for important responsibility, but is likely ineffective or even dysfunctional for many if not most students

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Computer-Assisted Instruction	Little research; one investigator found students changed information search procedures markedly via experience with computerized in-basket problem	Individualized; opportunity to practice decision-making in realistic but "safe" situations; two-way interaction of dialogue between students and program useful in developing information processing skills; student can get understanding of his own behaviors under various conditions	Expensive; programs and hardware not plentiful	Promising new approach, but considerable developmental work needs to be done to find best uses for this device
Learning Activity Packages*	No known research	Provides opportunity for individualization of instruction; utilizes multimedia	Expensive to produce; materials not plentiful, so must be produced locally	Largely untested

*For example, study guide, film strips, tapes, reading list, study and discussion questions, and exam.

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Internship	Little research on effectiveness, partly due to wide variety of practices called "internships"; one investigator found that 6 of 10 interns moved away from attitudes of their administrators, but another found that perceptions of 9 of 13 interns moved closer to those of their administrators	Realistic means of integrating academic learning with demands of the job	Expensive, both to the intern and to the institutions involved; often fosters learning of wrong things from wrong people	Usually valued highly by students, professors, and administrators, but investment in time and money in internships of a semester or more is questionable unless conditions are ideal
Clinical Studies	No known research	Provides opportunity for depth study, analysis, and interpretation of a real situation in all of its school-and-its-environment complexity	Heavy requirements of student and faculty time and energy; gaining access to the most useful situations requires healthy relationships between schools and community agencies, groups and individuals	Can be effective device for helping student to see problems as they really are, in all their complexity

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Simulation	Very few studies of effects on learners; one series of studies revealed little relationship between behavior on in-baskets and on the job	Reality-oriented, yet subject to control; permits student to test his behavior in variety of contexts in short period of time, without risk; interesting to students; active involvement	Materials usually costly and become dated soon; requires skilled instructor; the "reality" of some simulations might be an illusion	Usually rated highly by students; in hands of an able instructor, can be a useful tool, especially for teaching skills of analysis
Laboratory Approach*	Research extremely limited in educational administration; students consistently rate laboratory exercises higher than most other instructional devices; one study showed moderate gains in cognitive skills and changes in way principals spend their time	Accommodates many important principles of learning: active involvement, immediate feedback, face validity, relevance to learners' concerns, interest, and reinforcement	Exercises difficult to develop, hence in short supply; few instructors have skill required to make the approach maximally effective	When conducted competently, laboratory exercises are among the most exciting and highly valued instructional activities as seen by students

*The laboratory approach, as the term is used here, is an instructional system prodecure in which a group of learners is placed in a situation usually having some of the elements of reality simulation, in which the learners' behavior in dealing with the problem at hand produces data that are organized and fed back to the group to form a basis for analysis and interpretation by the group.

Method	Research on Effectiveness	Major Strengths	Major Weaknesses	General Appraisal
Gaming	Little research on effectiveness in educational administration; participants find the experience to be stimulating and helpful in giving them the "feel" of situations involving confrontation	Well regarded by students; reality-based; game theory is somewhat more advanced than is the case for some of the other methods	Games are in very short supply; can be time consuming as instructional devices; content becomes dated rapidly; expensive	Very few games are available which deal directly with the concerns of school principals, but the method is promising
Human Relations Training	Research is plentiful, although very little of it pertains to school administrators; "human relations training" covers a wide range of practice; the studies reveal changes in sensitivity and behavioral skill, and such changes often persist over a significant period of time	Can affect individuals deeply and profoundly, in contrast with the superficiality of many traditional methods	It is difficult to gain access to highly competent trainers, and without such trainers the results can be negative or even disastrous	More than any other method, this one rises or falls on the expertise of the trainer; in the hands of an unquestionably competent person, human relations training can be highly effective, but in the hands of a quack, it can be dangerous

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