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 involve- 
ment, 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 selected 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 1) 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 discrete 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

Skills to be Learned

- Technical
- Conceptual
- Human
  - (Methods and Content)

- Reading
- Lecture
- Discussion
- Field Trip
- Case
- Scenario
- Learning Activity Package
- Computer-Assisted Instruction
- Tutorial
- Student Research
- Laboratory Approach
- Gaming
- Simulation
- Human Relations Training
- Clinical Study
- Team Research
- Internship
- Understanding
- Levels of Learning
- Application
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

<table>
<thead>
<tr>
<th>Levels of Learning</th>
<th>Skills to be Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Familiarity</td>
</tr>
<tr>
<td>Reading</td>
<td>High</td>
</tr>
<tr>
<td>Field Trip</td>
<td>Med.</td>
</tr>
<tr>
<td>Case</td>
<td>Low</td>
</tr>
<tr>
<td>Scenario</td>
<td>Low</td>
</tr>
<tr>
<td>Learning Activity</td>
<td>Low</td>
</tr>
<tr>
<td>Package</td>
<td>Low</td>
</tr>
<tr>
<td>Computer-Assisted</td>
<td>Low</td>
</tr>
<tr>
<td>Instruction</td>
<td>Low</td>
</tr>
<tr>
<td>Tutorial</td>
<td>Low</td>
</tr>
<tr>
<td>Student Research</td>
<td>Low</td>
</tr>
<tr>
<td>Simulation</td>
<td>Low</td>
</tr>
<tr>
<td>Human Relations</td>
<td>Low</td>
</tr>
<tr>
<td>Training</td>
<td>Low</td>
</tr>
<tr>
<td>Clinical Study</td>
<td>Low</td>
</tr>
<tr>
<td>Team Research</td>
<td>Low</td>
</tr>
</tbody>
</table>

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.
Method
Lecture
Discussion

FIGURE 4: METHODOLOGIES OF COLLEGE TEACHING*
A PRELIMINARY REVIEW

Research

Inconclusive; not many studies. Inconclusively, only some studies found to be super-effective. From instructors' points of view, lecture-centered (in contrast with student-centered) techniques are still primarily used.

Major Strengths

Can be used effectively to stimulate interest, explain difficult ideas, summarize, or synthesize; economical. Provides opportunity for students to learn from each other as well as from instructor; flexible; students can be active learners.

Major Weaknesses

Little if any feedback; learner is passive; student lectures (in form of reports to class) are often boring and ineffective. Often suffers from lack of planning, focus, and purpose. Often suffers from lack of planning, focus, and purpose.

General Appraisal

Can be useful for certain purposes, but used far too much and too indiscriminately to achieve purposes ill-suited to the method. Lectures are often unoriginal, unstimulating, or summarize, or make only reports to the instructor. Passive student, little interaction. A poor method for any purpose but can be useful for certain purposes. Can be used effectively. Inconclusively, only some studies found to be super-effective. From instructors' points of view, lecture-centered (in contrast with student-centered) techniques are still primarily used.

*References upon which commentary is based, are appended.
Research Method on Effectiveness

**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.

### Major Strengths
- Can provide realistic; versatile; inexpensive
- Realistic; versatile; inexpensive
- Can provide realistic
- Can provide realistic context for variety of activities, including role playing and small group problem solving

### Major Weaknesses
- If discussion is not led well, can be fruitless exchange of opinions
- Effectiveness depends on skill of instructor--as with case method, could be simply a sharing of opinions
- Effectiveness depends on skill of instructor--as with case method, could be simply a sharing of opinions

### General Appraisal
- Can be effective method if discussion is expertly led, particularly for developing analytical skills
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### Effectiveness
- Realistic; versatile
- Realistic; versatile
- Realistic; versatile
- Realistic; versatile

### No Known Studies
- No Known Studies
- No Known Studies
- No Known Studies
- No Known Studies

### Research Method
- Very few evaluative studies reported; evidence tends to support the use of the case method, as in a scenario, that establishes the situational context within which all the constructs and principles are introduced and dealt with.
Method
Independent Study
Student Research

Major Strengths
- Inconclusive; adapting to one study, individual needs; effectiveness lies largely in covering of factual content
- Economical

Major Weaknesses
- Except in the case of programmed texts, which are largely in covering
- Learners have no opportunity to interact with learning material
- learner therefore has no content of material
- selection of material
- Guidance provided in text, which are available, and if adequate reading

General Appraisal
- If adequate reading (or other materials) of programmed needs, except in the case of economical texts, which are largely in covering
- Inconclusive; according adaptable to individual needs
- Not relevant in covering
- Inconclusive; according adaptable to individual needs

If production of research a major objective, then research is a most active role
- The receipt of degree in only ten universities
- Education graduates: Most educated
- In only one university, while also can
- Training to pro
- For doubts, usually by doing
- Means of student and faculty consumption much
- Ideally, provides means of student's learning by doing while also contributing to professional knowledge; adaptable to individual needs

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Method

Computer-Assisted Learning Activity

Packages

Research on Effectiveness

Little research; one investigator found students changed information search procedures markedly via experience with computerized in-basket problem

No known research

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

Major Strengths

Locally media must be produced
Instructional interaction is present
Course materials are expensive

Evaluates opportunity

Major Weaknesses

Expensive

Research activity

Learning

General Appraisal

Needs for this device are to be done to find best supplemental work needs

Promising new approach

Largely untested

Condizions under various his own behaviors understanding of student can get
Process the students' information

Partial evaluation of dialogue between students and program useful in developing information processing skills

Student can get an understanding of his own behavior under various conditions

Promising new approach

Largely untested

Expensive; programs and hardware not plentiful

Provide opportunity for individualized instruction

Little research

Computer-assisted instruction

Assisted instruction

Little research

Research

Method

on Effectiveness

Research
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.

No known research studies major strengths:
- Realistic means of integrating academic learning with demands of the job
- Provides opportunity for depth, study, analysis, and interpretation of a real situation in all of its school-and-its-environment complexity

Major weaknesses:
- Expensive, both to the intern and to the institutions involved; often fosters learning of wrong things from wrong people
- 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

General appraisal:
- Usually valued high by students, professors, and administrators, but those of their administrators moved closer to those of 6 of 10 interns found that 9 of 13 interns moved away from attitudes of their administrators, called "internships." effectiveness on depth research

Research method:
- Usually valued high by students, professors, and administrators, but those of their administrators moved closer to those of 6 of 10 interns found that 9 of 13 interns moved away from attitudes of their administrators, called "internships."
The laboratory approach, as the term is used here, is an instructional system procedure 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 is evaluated and analyzed to form a basis for analysis and interpretation by the group. *The laboratory approach, as the term is used here, is an instructional system procedure 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 is evaluated and analyzed to form a basis for analysis and interpretation by the group.*

Major Strengths

- 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 accommodates many important principles of learning: active involvement, immediate feedback, face validity, relevance to learners' concerns, interest, and reinforcement.

Major Weaknesses

- Materials usually costly and become dated soon.
- Requires skilled instructor; the "reality" of some simulations might be illusion.
- Exercises difficult to develop, hence limited in education.
- Few instructors have skill required to make the approach maximally effective.

General Appraisal

- Usually rated highly by students.
- In hands of an able instructor, can be a useful tool.
- Especially for training in which the skills of analysis may be an illusion.
- Period of time, "reality" of some exercises is short in contrast to real job.
- Material is usually reality-oriented, not subject to test results.
- Very few studies on effectiveness of exercises on learners.
Research Method on Effectiveness Gaming, Human Relations Training.

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.

Research is plentiful although very little of it pertains to school administrators; "human relations training" covers a wide range of practices; the studies reveal changes in sensitivity and behavioral skill, and such changes often persist over a significant period of time.

Major Strengths

- Well regarded by students; reality-based; game theory is somewhat more advanced than is the case for some of the other methods
- Can affect individuals deeply and profoundly, in contrast with the superficiality of many traditional methods

Major Weaknesses

- Time consuming; instructional devices of school principals, but the method is promising. Very few games are available which deal directly with the content of school curriculum. Very few games are available which deal directly with the content of school curriculum. Very few games are available which deal directly with the content of school curriculum.
- General Appraisal

Research Method on Effectiveness Gaming

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References on Methods

Lecture & Discussion


Student Research


Computer-Assisted Instruction


E. Wailand Bessent, unpublished study of computerized in-basket problem, University of Texas at Austin.

Internship


Stephen P. Hencle, Ed., The Internship in Administrative Preparation (Columbus: University Council for Educational Administration and the Committee for the Advancement of School Administration, 1963).

Harvey J. Hartley and George E. Holloway, Jr., The Administrative Internship in Education (Buffalo: The Faculty of Educational Studies, Department of Educational Administration, The State University of New York at Buffalo, 1968).