ABSTRACT
          Designed to provide direction for those who
contemplate establishing a competency-based program for vocational
teachers, this monograph contains major papers developed for the
Institute on Competency-Based Teacher Education for Virginia
Vocational and Technical Teacher Educators held in Blacksburg,
November 23-26, 1975. Also included are two papers developed after
the institute was held. Titles and authors are (1) "The Challenge of
Competency-Based Teacher Education" by Ruth D. Harris and Curtis R.
Finch, (2) "Competency-Based Education: Status and Research" by W.
Robert Houston, (3) "Instructional Materials for Competency-Based
Teacher Education" by James B. Hamilton and Glenn E. Fardig, (4)
"Delivering Teaching/Learning for Competency-Based Education" by
Daniel E. Vogler, (5) "Writing Competency-Based Education Modules" by
Daniel E. Vogler, (6) "Concerns in the Implementation of
Competency-Based Teacher Education" by Martha Lee Blankenship, and
(7) "Toward a Framework for Implementing Competency-Based Teacher
Education" by Curtis R. Finch and Ruth D. Harris. (WL)

IMPLEMENTING COMPETENCY-BASED TEACHER EDUCATION:

FUTURE DIRECTIONS FOR VOCATIONAL TEACHER EDUCATORS

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PREFACE

The purpose of this monograph is to provide direction for those
who contemplate establishing a competency-based program for vocational
teachers. This document should be of value as a basic resource in the
area of competency-based teacher education (CBTE) and serve as a useful
tool for CBTE program implementation and improvement.

The content for this publication evolved from the Institute on
Competency-Based Teacher Education for Virginia Vocational and Technical
Teacher Educators which was conducted in Blacksburg, Virginia, November 23-26, 1975. Major papers developed for this conference as well as
two papers developed after the institute was held are included in the
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THE CHALLENGE OF COMPETENCY-BASED TEACHER EDUCATION

If it were possible to gaze into a "crystal ball" and see teacher education in the year 2001, what would be visualized? Would Competency-Based Teacher Education (CBTE) be seen? If so, the following scenes might be viewed. Current problems involve demonstrating that you are competent as a teacher educator, obtaining your license to perform your role by fulfilling the fitness criteria and competently performing professional tasks. As you pass by the screening device hooked up to the latest model of the WXYZ computer system, you wish you could relive the Seventies, Eighties and Nineties. Accountability was an issue in those days but who believed that it would ever come about? Oh, yes, you remember all of those innovative programs: individualized instruction, behavioral objectives, open education, team teaching, relevant instruction, accountability, and competency-based teacher education. As these new terms came on the educational scene, you tossed them around in your mind for awhile but dismissed them because you figured that they would blow out as quickly as they blew in only with gale wind force.

Behavioral objectives, individualized instruction, criterion referenced measures, student accountability, and the systems approach were one thing, but competency-based teacher education was something else. Entirely! Or was it? Maybe it was a concept that developed out of the earlier education innovations and was spurred on by increasing demands for accountability, relevance, and cost-effective schooling. In those days, technological advances and readiness for competency-based teacher education programs were just emerging. Remember your boast: "The cost is too much; we will never be able to implement it...it's just another education fad."

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Of course, you were kidding. After all you implemented it during the Eighties, and now you talk about costs in relation to benefits or effectiveness. Yes, you remember when competency-based education kept you on your toes.

Fantasy aside, take a serious look at competency-based teacher education and the challenge for the future. Today's student will spend more time in the 21st century than in the 20th. Simple arithmetic warns us how close we are to the new century; it is as close as 1952. It is becoming common to say that, given the current rate of knowledge growth, today's 18-year-old college student has access to only three percent of the knowledge that will be available to him/her when he is 50. Confronted with the changing school environment, taking a look at what is happening now leads to a pretty specific conclusion: we may not be taking our needed reformation of teacher education programs and its relationship to the real world of teaching seriously enough.

The movement toward competency- or performance-based teacher education has been inspired by the belief on the part of some individuals that it offers the potential of helping solve many of the problems associated with teacher education. CBTE has been described by some educators as "the most significant lever for educational reform since Sputnik" and as "one of the most influential and important developments in this progressive effort to advance the process of schooling" (Rosner and Kay, 1974). Others refer to it as an "old wine in new bottles," and "a good idea if you could figure out what it is."

Although some individuals may have doubts concerning its effectiveness, much is being discussed and written about competency-based teacher education.

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Attempts to operationalize CBTE are increasing as the national movement gains momentum.

RATIONALE AND HISTORY OF COMPETENCY-BASED TEACHER EDUCATION

Competency-based teacher education is a concept that has developed over a number of years (Broudy, 1972; Rosner and Kay, 1974). The competency-based approach to teacher education grew out of dissatisfaction with programs existing in teachers, colleges and colleges of education. Broudy (1972, p. 1) states:

> The dissatisfaction is a fairly old story; the fires of criticism fanned by Bestor, Koerner, Rickover, the Council for Basic Education, and Conant in the late 50's and early 60's leaped higher than ever when fueled by the troubles of urban schools in the late 60's. The public was told that teachers oppressed and murdered children (at least in spirit) and that the public school, like God, was dead.

Efforts were made to combat the problem as it was beginning to be recognized by leaders in the field. Federal funds were invested in a variety of R & D efforts which stimulated recent advances in instructional technology. Both practicing educators and the educational research community were more willing to address themselves more closely to the problems of the classroom. Protocol and training materials were developed and field-tested. Much of the curriculum materials developed were individualized and personalized. These developments led to a focus on education that was more systematic and field-oriented. Instruction was tailored to specific student outcomes, student evaluation and program evaluation passed upon explicit goals.

Rosner and Kay (1974) indicate that competency-based teacher education seems to have been the culmination of all the recent efforts to improve

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and upgrade education programs. Many characteristics which have been associated with other recent advancements in instructional technology are also associated with competency-based teacher education.

The dissatisfaction with teacher education by some individuals was attributed to the gap between theory and practice. Teacher education programs were made up largely of academic studies, courses in professional education, and a student teaching experience. This curriculum did not guarantee the output of competent teachers who could successfully teach within the public schools and solve the many problems associated with their role as a classroom teacher. The approach offered through competency-based teacher education would evaluate and more closely guarantee the product, not the input which was supposed to produce the product.

DEFINITION AND CHARACTERISTICS OF COMPETENCY-BASED EDUCATION

A number of definitions of CBTE have been discussed in recent publications (Houston and Howsam, 1972; Finch and Hamilton, 1974; and Brooks, 1974). The most widely quoted and accepted definition was developed by Elam (1971, pp. 6-11). The Elam essay indicated that a teacher education program is competency-based if the competencies to be demonstrated by the student are derived from explicit conceptions of teacher roles, stated so as to make possible assessment of a student's behavior in relation to specific competencies, and made public in advance. The assessment of the student's competency uses his performance as a primary source of evidence although it takes into consideration evidence of the student's knowledge.

Competency-based teacher education proposes to analyze teaching into a set of operations or tasks in order to accomplish the needed reforms in

eliminating the gap between theory and practice. The prospective teacher

would be trained to reach competence and certified in each of the tasks

necessary to become a competent teacher. Having gone through a competency-

based program, the prospective teacher would be ready to cope with what-

ever might be encountered in the schools of the real world. ·

PROBLEMS AND ISSUES OF COMPETENCY-BASED EDUCATION

Advocates of CBTE point out the fact that the movement is not without

its problems, criticisms and critics. Schmieder (1973, p. 24) states:

> Any movement as complex as that for competency-based edu-
> cation is sure to inspire a great many relevant--and even some
> not so relevant--questions and issues regarding developmental
> problems and priorities.

The critical questions and issues regarding competency-based teacher

education have been discussed by several authors (Brooks, 1974; Finch and

Hamilton, 1974; Broudy, 1972).

Brooks (1974, p. 7) listed six of the frequent criticisms of competency-

based education:

1. The "sum of the parts" does not always equal the whole,

    and thus, the mere fact that students are able to demon-

    strate competence in isolation does not guarantee success

    in the classroom.

2. Because the competency-based program has as one of its

    foundations a systematic approach, it is mechanistic and

    dehumanizing.

3. A competency-based program claims individualization, and

    yet each student is expected to display the same compe-

    tencies; this claim does not seem consistent.

4. Trivial behaviors are those most easily operationalized;
    the really important aspects of teacher education may be
    overlooked.

5. We really know so little about how children learn that
    it seems ridiculous to base a program on competencies
    that may not be the appropriate ones.

6. The really important areas of teaching are in the affec-
    tive domain, and these are very difficult to categorize
    and measure.

These concerns have been discussed and excellent rebuttal statements
have been presented in the literature supporting the competency-based
education movement. Each teacher education program will have to resolve
these questions concerning the value and effectiveness of competency-
based teacher education for their own institution.

COMPETENCY-BASED TEACHER EDUCATION'S CHALLENGE

Rosner and Kay (1974) state that the long-range promise which CBTE
challenges teacher education to accomplish is to improve the quality of
instruction in the schools. This long-range promise is certainly a jus-
tification for CBTE. It is based upon two very important assumptions:
(1) that effective public schools are largely dependent on the quality
of teaching, and (2) that competent teachers can be prepared by teacher
education programs.

As implied in the assumptions, more knowledge concerning relation-
ships between elements of teacher education curriculum and indicators of
effective schooling needs to be acquired. CBTE offers the intermediate

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promise that teacher education institutions will have the demonstrable

capability of preparing knowledgeable and skillful teachers in curricula

whose component parts have been tested for validity against criteria of

school effectiveness.   it teacher education programs will

be willing to subject   of their curricula to empirica.   .

Professional recognition and commitment in CBTE is expected to re-

sult in more extensive support of teacher behavior research and the genera-

tion of interdependence between teacher behavior research and teacher

education program development and implementation. Another challenge that

CBTE offers is to stimulate widespread professional recognition of the

hypothetical, tentative nature of various teacher education curriculum

elements, and professional consensus on the need to validate these ele-

ments. CBTE should stimulate a commitment to tool up for the necessary

development and research to strengthen teacher education programs.

A Challenge for the Faculty

The faculty who participate in competency-based instruction must

have a strong commitment to the initial preparatory program for teachers

and believe that it is a critical component of the total teacher educa-

tion program. In implementing any new program time is needed and changes

must be made which require adjustments on the part of the faculty. Giles

and Foster (1975) indicate that efforts to solicit faculty participation

have pointed out the importance of modifying faculty loads to account

for the additional time and effort required in establishing the program.

Recognition of the efforts and accomplishments of faculty members must be

made and positive reinforcement given for faculty participating in an
assignment demanding increased time for instruction and student contact.

A Challenge for the Students

Students are challenged to focus their attention upon their perform-
ance. A recognition must be made on '' that their success will be
judged on performance as opposed to only cognitive experiences. Grading
will more than likely be on a "pass-fail" basis rather than by the conven-
tional grading system. An adjustment must be made to the grading system.
Students are challenged to participate in many more activities than are
required in the traditional pattern. Since the assignments usually require
continuous participation in a school setting, students are challenged to
acquire and exhibit professional behaviors earlier than the student in the
traditional teacher education program.

Students are challenged to develop the capacity for self-evaluation.
This skill is developed early and requires the additional competency of
evaluating with objectivity. Students electing the competency-based, field-
oriented patterns of teacher preparation must recognize that they will
forego many of the campus activities that would be available in the tradi-
tional program. Students are challenged to fulfill time commitments in
the field which often preclude their participation in many campus activities.

A Challenge for Accountability

CBTE establishes a framework from which teacher education programs
can demonstrate accountability. Knowledges, skills, and behaviors deemed
necessary for beginning teachers, and the evidence acceptable for assuring
that students possess these competencies are explicit and made public in

advance. CBTE offers the immediate promise of increased prospects for accountability.

In competency-based teacher education the student is held accountable for performance. Not only are the competencies derived from explicit conceptions of teacher roles, they are also made public in advance so that students r   toward developing these competenices. The compe-tencies are st.   to make possible assessment of the student's behavior in relation to each. The criteria to be employed in assessing the competencies are based upon the competencies to be developed. The expected levels of mastery under specified conditions are also made public in advance.

Competency-based programs are systematically designed with continu-ous feedback which makes the program more accountable for funds spent within the program. The student's performance is used as the primary source of evidence that the student has developed competence as a teacher. Objectivity within the program is strived for in CBTE. Not only is the performance of the student assessed but also evidence of knowledge rele-vant to planning for, analyzing, interpreting, and evaluating the class-room.

Accountability is evidenced in competency-based teacher education by measuring the student's rate of progress by demonstrated competence rather than by time or course completion. The program utilizing CBTE will design the instructional program to facilitate the development and evalu-ation of the student's achievement of the competencies specified rather than unidentified fuzzy concepts.

This, then, is the challenge of competency-based teacher education.
Let us hope that its course will continue to be charted wisely. The
papers which follow serve to assist in this charting process. Each fo-
cuses on meeting the challenge which competency-based teacher education
has provided for us.

REFERENCES

Brooks, S. L. Competency-Based Teacher Education: The State of the Art.
    Washington, D. C.: American Home Economics Association, 1974.

Broudy, H. S. A Critique of Performance-Based Teacher Education. Wash-
    ington, D. C.: American Association of Colleges for Teacher Education,
    1972.

Elam, S. Performance-Based Teacher Education: What is the State of the
    Art? Washington, D. C.: AACTE, 1971.

Finch, C. R. and   B. Hamilton. "Performance-Based Teacher Education
    Curricula: Implications for Programs," in A. M. Gorman, ed., The
    Changing Educational Scene. Columbus: The Ohio State University,
    Center for Vocational Education, 1974.

Giles, F. T. and C. D. Foster. Changing Teacher Education in a Large
    Urban University. Washington, D. C.: AACTE, 1975.

Houston, W. R. and R. B. Howsam. Competency-Based Teacher Education:
    Progress, Problems, and Prospects. Chicago: Science Research As-
    sociates, 1972.

Rosner, B. and P. M. Kay. "Will the Promise of C/PBTE Be Fulfilled?"
    Phi Delta Kappan, January, 1974.

Schmieder, A. A. Competency-Based Education: The State of the Scene.
    PBTE Series: No. 9, Washington, D. C.: AACTE, 1973.

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COMPETENCY-BASED EDUCATION: STATUS AND RESEARCH

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COMPETENCY-BASED EDUCATION: STATUS AND RESEARCH

ESSENCE OF COMPETENCY-BASED EDUCATION

What is competency-based education (CBE)? This question 'is asked and answered, discussed and debated all too often, typically with confusing results. Each person reflects his own value system as he puts on his unique set of blinders and defines this movement. It has been pointed out elsewhere (Houston and Howsam, 1972) that CBE is a coined term, a term found in no dictionary. One could take each word, define it, then relate it to the others. Such a process would derive a description of CBE something like: "An educational program based on competencies." Such a description, however, does not deal with the central issue--what is competence? The specific characteristics of competence are personal, both in their demonstration and in their evaluation.

Each of us has a conceptual model of the competent professional, whether a teacher, physician, engineer, architect, or administrator. Our model may be quite explicit or it may be vague; it may be synergistic and wholistic; or it may consider only a minor portion of the tasks performed. It may or may not realistically reflect professional behavior or reality; but it is our model, and it directs our actions and reactions vis-à-vis that professional role.

Think about the physician. What do doctors do? How do they act? How do patients act when in their offices? Their behavior, and the

patient's actions often are played out as a drama where the script is already written, only the precise lines of dialog need be completed. The individual's perception of the physician may be greatly in error. After all, few of them see the many facets of the physician's professional role; but what they see channels their cc   him.

Compare that role perception with that of a lawyer. Think of the client in an attorney's office. What role does he typically play? How does his role differ from expectations for the physician?

Consider other professional roles--social worker, accountant, teacher, engineer, school administrator. For each one, the individual has derived a model of expectation and a model of competence.

Competence, then, is a conceptual model of an effective professional which is based on experience. Each individual, whether in that role or not, has derived his own definition of competence. Usually he can characterize someone as competent or not, even though he has difficulty in articulating the criteria used in that judgment.

In most competency-based programs, the staff has somehow pooled these conceptions of competence and delineated a mutually acceptable list of competencies. These competencies are, in reality, indicators of competence.

Faculties have expended hundreds of hours deriving and refining these sets of competencies. Some have used only their own professional judgment; others have made extensive task analyses, formulated a theory, and deductively derived competencies from the theory. Others have relied on training programs from the past to define objectives for the future, and still others have sought to ground their set of competencies

in the social fabric of our times and in the roles society has assigned
to the professional.

Whatever means and procedures are used in de   ping a s _ of com-
petencies, that set is a poo: ef ection cf the conceptual model of
competence. First, it includes only some of the elements of competence.
Not all factors are, can be, or perhaps should be noted as competencies.
The competency list typically includes on_ the most obvious indicators
of competence. Second, those competencies listed often are based on
training needs. As competencies are conceptualized by program developers,
a mental screen seems to eliminate or modify those less conducive to
educating the professional. Third, the written specifications apparently
are never so good as the conceptual model. Somehow, as the mental pic-
ture is described in words, something is lost in translation. Last,.
the original conception was not singular but usually from many persons.
The basic model was really models. The sum of competencies in a pro-
gram, then, is only an approximation of competence.

Why spend so much energy in specifying competencies? Human nature
and some research to date have indicated that persons are more likely
to achieve delineated goals and objectives than fuzzy ones. (Duchastel
and Merrill, 1973; Meunier, 1974; Dawley and Dawley, 1974; Duchastel
and Brown, 1974). Further, professional education programs are more
likely to teach to relevant objectives if their best efforts have served
to specify the most appropriate approximation of the model professional.

Competency lists are very similar. Perhaps this is due to an ef-
fective communication network among developers but not entirely.

Many groups   ed competencies   sult i   milar lists regardless of th a a   sed in formulating them.

In February 1975, the results of a survey of competencies most desired by teachers were reported to the Annual National Conference of the American Association of Colleges for Teacher Education 1975). During 1973-1974, 1512 teachers reacted to a set of thirty-three competency statements as part of a series of needs assessment studies. The competencies, derived from task analyses of teacher practice, included three general areas: (1) design and evaluate instruction, (2) interact with students, and (3) professional behavior. A test booklet included: (1) a listing of these competencies, (2) a detailed description of subcompetencies, and (3) a nine-point self-assessment scale for each competency, with descriptors of competence at three of the levels. Teachers reacted to each of the thirty-three self-assessment scales in two ways: perceived <u>current</u> level of competence and perceived <u>desired</u> level of competence.

The pattern of their responses to desired competencies was clear and consistent. Competencies which specified interaction with students were clearly perceived as more important than those involved with designing or evaluating instruction or in other non-student interaction roles. The eight most desired competencies are listed below.

The teacher:

1. Organizes resource and materials for effective instruction.

2. Gives clear, explicit directions to students.

3. Responds to "coping" behavior of students.

4. Identifies clues to student misconceptions or confusion.

5. Provides for the appropriate use of a variety of communication patterns within the classroom.

6. Utilizes a variety of instructional materials and resources.

7. Builds self-awareness and self-concepts in students.

8. Reacts with sensitivity to the needs and feelings of others.

Competencies in the highest quarter (those most desired) included all four of the communication competencies. Competencies dealing with accessibility and use of instructional resources were included as were two of three interpersonal competencies (facilitating student self-awareness and affective interaction with others).

Those competencies are compared with the ones included in the bottom quarter of desired competencies which are listed below.

The teacher:

1. Administers and interprets assessment techniques (i.e., standardized tests and sociometrics).

2. Designs and uses teacher-made diagnostic tests.

3. Gathers information on individual differences among students such as interests, values, cultural and socio-economic background.

4. Groups students on basis of data.

5. States competency-based objectives correctly.

6. Plans activities with students.

7. Evaluates teaching behavior using coded instruments and plans for change on basis of results.

8. Interacts and communicates effectively with parents and community.

9. Works effectively as a member of an educational team.

Four of these competencies were concerned with collecting data and a fifth defined how data were to be used. It is a paradox that, while many teacher

educators are concerned that teachers make decisions on the basis of data,
teachers themselves rate this skill quite low.

Three other competencies teachers rated in the lowest quarter, all
related to interaction, pose a second dilemma. Teachers rated planning
with students, interacting with parents and community, and working as a
member of an educational team among the least desired competencies. Al-
though communication and interpersonal relations (primarily under the
teacher's control) were highly rated, those involved with adults or on
a less-controlled basis were rated considerably lower.

The pattern of teacher response seems to be more general than first
believed. When the study was presented at AACTE, the audience was in-
vited to discuss the findings. At that time several other studies were
described. Their findings were amazingly consistent with the results of
the Houston study.

The implications of these data for teacher preparation and inser-
vice education are noteworthy. The focus of efforts should be on that
phase of the job in which the professional directly interacts with his
client. This does not preclude other concerns in the curriculum, but it
does suggest a point of emphasis.

Research on teacher effectiveness or as Jere Brophy prefers to call
it, optimal teaching, provides another perspective for identifying com-
petencies. A national conference on research in teaching was held
November 3-5, 1975 at the University of Texas at Austin. Most of the
researchers in attendance were currently studying teacher effectiveness.
For three days, they presented their findings from extensive observational
studies, some conducted over a period of several years. Although they

couchéd their conclusions in the conservative and tentative language of

researchers, some general impressions of those findings from a prac-

titioner seeking the best evidence are available.

No single variable was consistently important as a measure of teacher

effectiveness; the configuration of variables, the context, and the inter-

relationship of student-teacher interaction were more powerful. Dif-

ferences were found in effective teacher behavior between primary and

intermediate grades and between low and middle socioeconomic areas.

Clearly evident was the effect of direct instruction on student

achievement. Rosenshine (1975) summarized studies by Stallings, Soar,

and Brophy and Evertson on primary grade reading and mathematics achieve-

ment. He described direct instruction as an approach where:

> . . . the teacher is the dominant leader of the classroom activi-
> ties, one who decides which activities will take place, and who
> directs without giving reasons. A good deal of time is spent
> on number and reading activities using textbooks and academic
> workbooks or in verbal interactions directly on reading and
> mathematics. Students are supervised by the teacher while they
> work, and there is little free time or independent-unsupervised
> activity. Students usually work in small or large groups.
> Teacher questions or workbook questions tend to be narrow and
> at the child's level so that pupils have a high percentage of
> correct answers. The questions usually have only a single an-
> swer, and the teacher immediately reinforces the answer as
> right or wrong. There is little discussion of the answers.
> Correct answers are followed by another question, incorrect
> answers are followed by the teacher giving the answer. The
> learning is approached in a direct and business like way and
> is organized around questions posed by the teacher or materials
> provided by the teacher.

> There are two ways to describe the opposite from direct instruc-
> tion. In the Follow Through programs, which contained programs
> ranging from highly structured to highly inquiry oriented, the
> opposite to direct instruction were classrooms in which there
> was more game-like activities, and art work, and where play was
> an object in itself. The pupils had free choice, free work groups,
> and frequent socialization. The teacher approaches learning in
> an informal manner, organizes learning around a pupil's own

problem, encourages pupils to express themselves freely, asks open-ended questions on academic and non-academic topics, and joins in the pupils' activities.

Time involved in learning activities seems to be related to student learning. When classes were observed over long periods, the amount of time each student was actually engaged in instruction was amazingly short. Berliner cited cases where the teacher allowed 45 minutes for students to complete a task, but individual students worked as little as three and one-half minutes on it. McDonald reported in a California study that individual students were engaged in actual reading instruction only 40 hours a year, even though reading was identified as one of the most important subjects. Teachers should consider their own practices in terms of the actual time each student actually is engaged in meaningful learning activities. They should consider the class as a whole, and from the perspective of individuals in the class. Further, teachers may need to reconceptualize organization and management to accomodate greater teaching time. For students from lower socioeconomic homes, time becomes even more critical. Their absence rate is higher while the amount of study time out of school is lower, reducing still further the time spent on learning.

Researchers concluded that structure seemed to facilitate learning while chaos was disfunctional. They found praise to be moderately but not strongly related to student achievement. The pattern of praise was important with those who praised often, being less effective than those who reserved it for special cases. Corrective feedback to students by the teacher was an important correlate of teaching effectiveness, but it rarely occurred.

Simply having a wide variety of materials available to students was not related to effectiveness; neither was multiple instructional options. The appropriateness rather than number of instructional resources was important. When students were engaged in independent activities, the availability of the teacher to assist students elicited positive results.

Class discussions are not so prevalent as often thought. In the primary grades, higher order questions were disfunctional, but lower order questions were positively related to learning. Pupil-pupil interaction rarely occurred.

Although teacher perception and research findings may not produce conclusive results and cannot be rigidly employed in program design, they provide some directions for practitioners. Summaries of research such as those by Rosenshine and Furst (1971) and interpretations by Good and Brophy (1973) and by Dunkin and Biddle (1974) provide a wealth of clues for improved teacher education.

EXTENSIVENESS OF CBE IMPLEMENTATION[1]

Conference programs and professional chatter would indicate that many institutions are engaged in competency-based programs. Critics might add that they were lured there by federal dollars, power-hungry state education departments, and fast-talking colleagues. The actual extent to which CBE is being implemented probably cannot be known, but CBE is extensive and growing.

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[1]The author is indebted to Karl Massanari for his assistance with data in this section.

Several years ago, the AACTE (1973) conducted a survey of 1250
institutions preparing teachers, asking if they were operating, inves-
tigating and/or planning CBTE programs. Of the 783 respondents (a 63
percent return), 131 (17 percent) said they were operating CBTE programs,
228 (29 percent) said they were not, and a large number, 424 (54 per-
cent), said they were in some stage of investigation.

In May 1973, Educational Testing Service in conjunction with AACTE
(Sherwin, 1974) conducted a follow-up survey of the 131 institutions that
had identified themselves as having competency-based programs in the
initial survey. Seventy-five usable responses were received. A large
proportion of the respondents, 71 percent (53 institutions), had operated
CBTE programs less than two years. Most of the CBE activity occurred
at the undergraduate level. According to the returns, a total of 24,399
students were engaged in CBE programs.

State education departments have assumed more proactive stances in
the development of certification plans. Some confusion has resulted in
the literature between Competency-Based Education and Competency-Based
Certification. Resolutions in professional association meetings and
writings and speeches by educators attacking CBE often are supported by
data on certification/credentialling requirements. This has been true
particularly in New York where a CBE mandate is being implemented.

During the past five years, every state has studied CBE/Competency
Based Certification (Pittman, 1975). Twenty-six states have revised their
teacher education and certification standards, resulting in approved
Program Approaches. Of the 29 states who now utilize the approved Pro-
gram Approach, 17 either have developed separate CBTE standards or the

approved Program Approach, which permits the state to encourage CBE.

Twenty-three states have produced documents which specifically address either CBE or CBC.

Thirteen states have formed a national consortium to share information, materials, and training procedures, and to help member states to develop management systems or competency approaches to teacher education and certification. The Multi-State Consortium is composed of Arizona, California, Florida, Michigan, Minnesota, New Jersey, New York, Oregon, Pennsylvania, Texas, Utah, Vermont, and Washington.

Professional organizations and learned societies have reacted to the CBE movement in a variety of ways. The National Education Association condemned it as being premature in a 1974 resolution passed by NEA General Assembly.[2] The American Federation of Teachers has supported CBE while vocally condemning certification based on such processes. Social science and humanities associations typically have been opposed to the movement while more technically oriented associations have supported it or remained silent on the issue. Table 1 summarizes a study of professional organizations made by Massanari (1974). Of 91 associations polled, 67, or 74 percent, responded to the survey.

The Research and Development Center for Vocational Education at Ohio State University has specified a set of competencies and pilot tested over 100 supporting instructional modules. A national CBE center in the liberal arts has been established at Bowling Green University. The School Library Manpower Project administers six experimental CBE program models.

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[2]The motion was made and seconded by two New York representatives with much of the discussion confusing mandated certification with educational process.

Dentistry, nursing, medicine, allied health, business administration, law
social work, engineering, and nuclear radi... are but some of the el...
c...ri... ...acher ed... ... ...hich CBE is being ...ployed. Several ...eral
ar... c... ...ges are ...peri... ...g wit... a CBE ap... ...c...

Table 1

CBE Activities by Professional ... ...ations

Activity	No.	Percent
Activity Involved in Some Way	40	60
Session(s) on CBTE at Regional or National Conference	33	49
Committee Studying CBTE	32	48
Published or Planning to Publish Article(s) on CBTE	33	49
Developed or Are Developing:		
List of Competencies	20	30
Position Statement	17	25
Engaged in Experimental Work in CBTE	7	10

At the federal level, Teacher Corps, Fund for the Improvement of Post
Secondary Education, and Career Education are among programs highlighting
CBE approaches. The Free University of Iran opens in 1977 as a completely
competency-based institution. Teachers colleges in Israel, Saudi Arabia,
and England are studying CBE. UNESCO sponsored a week-long training
conference in 1973 for its chief technical advisors from around the world.
An innovative project in technical education operates in Munich and one
on basic education functions in Brazil.

T. m. of published materials abo L. has grown in the past
three   Mu. of these materials ar.   .ndant, but a growing reali-
.atio .a. .e pe.._ived of the power of the .ovement, the need .or less
.igid sy- .s,.. .volving creativity of a. roaches, and the growing
number of . .s.. who have just discovered CE..

JUST A FAD?

In t   . 1975. an Iranian educ...or asked if CBE wa. just
another A. ... .a. He .ecalled "teacher proof" curriculum materials,
computer- .e. ...ruction, interfacing, and other terms and movements
that seeme to ..ish just as they became known. His conclusion was that.
.Americans   ..e on the new and different and that they cannot stabilize
long enoug. .. .st the worth of a movement or idea.

Perhac. C?F is just another fad. However, its roots are deeply em-
bedded in ba.ic American traits. The focus on objectives, on pragmatic
results, or refinement based on feedback is part and parcel of the free
enterprise or .   The name may change, but the basic tenets of the
movement will .m...n as residuals in most future educational endeavors.
With rapid.. de-a. ping technology and a changing society, the basic
philosophy and concepts of CBE remain the most viable approach. Because
of its regenerative process, CBE should lead to even more effective
preparation .r...ases and movements.

Profes.io...s continually feel they are pressed to produce results.
The doctor must cure his patient; the lawyer free his.client; the teacher
facilitate .ud.nt learning. Dr. Ann Olmsted, sociologist on the medical
faculty at .i. .gan State University, pointed out in a recent meeting of

a Phi Delta Kappa National Commission that gener $\ldots$ $\ldots$ actiti $\ldots$ ers in medi-

cine could be characterized as simply keeping the patient alive until

his natural body functions made him well. The parallel with teaching is

all to evident. Some teachers may be contributi $\ldots$ studen learning

by keeping them in a school while their natural $\ldots$ $\ldots$ ity and instincts

stimulate learning. Research studies reported earl] $\ldots$ tend to support

this. More effective teachers are those who teach $\ldots$ teach directly,

structure their instruction, and engage students $\ldots$ ely over longer

time periods in learning activities. They know $\ldots$ their goals are,

and they teach to those goals.

Research on teacher effectiveness at the elementary school and high

school levels may be equally applicable in universities. Direct instruc-

tion, time on tasks, corrective feedback by teacher, and structured

learning may be important ingredients in the process.

The emphasis of competency-based education on objectives which are

reality oriented and based on practitioner needs, which include instruc-

tion tailored to objective achievement, which employ evaluation that

compares achievement with objectives, and which use corrective feedback

to improve practice may provide the process for improve professional

practice.

Charles Kuralt, in one of his television series "On the Road,"

summed up an American philosophy and spirit with these lines:

> As our country reaches for its 200th year, we realize
> It is not how old are you
> But what have you done, and
> What can you do.

These comments also reflect the spirit of the competency-based education

ovement. The _essence_ competence is _doing_, not simply knowing how or
what to do. The ultimate criterion of such actions is accomplish-
ments in results, in the consequences of actions. The prospects for im-
proved education the years ahead are indeed bright.

American Association of Colleges for Teacher Education. Committee on Performance-Based Teacher Education. Washington, D.C.: American Association of Colleges for Teacher Education, 1973.

Lawler, L. T. and H. H. Dailey. "Incidental and Intentional Learning of Economic Information on Beginning Typewriting," Perceptual and Motor Skills, 1974, 38, 337-338.

Duchastel, P. C. and B. R. Brown. "Incidental and Relevant Learning with Instructional Objectives," Journal of Educational Psychology, 66: 481-485, 1974.

Duchastel, P. C. and P. F. Merrill. "The Effects of Behavioral Objectives on Learning: A Review of Empirical Studies," Review of Educational Research, 43: 53-69, 1973.

Dunkin, Michael J. and Bruce J. Biddle. The Study of Teaching. New York: Holt, Rinehart and Winston, 1974.

Good, T. L. and Jere E. Brophy. Looking in Classrooms. New York: Harper and Row, 1973.

Houston, W. Robert. "Perceived Relative Importance of 33 Competencies by 1512 Teachers." Houston: College of Education, University of Houston, 1973.

Houston, W. Robert and Robert B. Howsam. Competency-Based Teacher Education: Progress Problems and Prospects. Chicago: Science Research Associates, 197

Massanari, Karl. "CBTE and Professional Organizations." Washington, D. C.: American Association of Colleges for Teacher Education, 1974.

Palmer, G. T., et al. "Overt Rehearsal and Long-Term Retention," Journal of Experimental Psychology, CII, No. 5 (1974), 915-916.

Putman, John C. "Actions Taken by State Departments of Education in Developing CBTE Certification Systems." Paper presented at National Conference of the Association of Teacher Educators, New Orleans, Louisiana, February, 1975.

Rosenshine, Barak. "Recent Research on Teaching." Paper presented at the National Conference on Research in Teaching, The University of Texas, Austin, November 4, 1975.

Rosenshine, Barak and Norma F. Furst. "Research on Teacher Performance Criteria," Research in Teacher Education: A Symposium, ed. B. O. Smith. Englewood Cliffs, N. J.: Prentice-Hall, 1971.

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Sherwin, Susan S. "Performance-Based Teacher Education: Results of a
    Recent Survey." Princeton: Educational Testing Service, 1974.

INSTRUCTIONAL MATERIALS FOR

PERFORMANCE-BASED TEACHER EDUCATION

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INSTRUCTIONAL MATERIALS FOR
PERFORMANCE-BASED TEACHER EDUCATION

INTRODUCTION

Seldom in the history of teacher education has an idea received
such widespread interest and rapid acceptance as has performance-based
teacher education (PBTE). Developmental work is proceeding in a number
of research and development centers, traditional teacher education pro-
grams are being modified to meet some or all of the criteria of PBTE,
and the installation of completely new PBTE programs is being contem-
plated in a great many teacher education institutions.

In spite of this, there is much that is still unknown about how
best to design curricula and how to organize and manage PBTE programs.
It is the purpose of this paper to bring together some salient infor-
mation about the current status of PBTE as it relates to vocational
education and to describe a rational approach to PBTE program develop-
ment. Particular attention is given to the urgent problems involved in
constructing and refining individualized instructional materials that
incorporate the principles of PBTE. The work of the Performance-Based
Curricula Program at The Center for Vocational Education has provided a
basis of knowledge and experience for much of what follows.

Material has been drawn from the following relevant documents pre-
pared by Center staff:

James B. Hamilton and May W. Huang, Resource Person Guide to
Using Performance-Based Teacher Education Materials.

Robert E. Norton, Lois Harrington, and Janet Gill, Performance-
Based Teacher Education: The State of the Art.

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Glen E. Fardig, Robert E. Norton, and James B. Hamilton, Guide
to the Implementation of Performance-Based Teacher Education.

These documents, at present in draft form, are covered by develop-

mental copyright and therefore may not be reproduced. However, these

and other materials will be available to the education profession in

final published form in the near future.

PBTE DEFINED

PBTE is an approach to teacher preparation in which the teacher is

required to demonstrate essential teaching tasks in an actual teaching

situation. Actual performance of the tasks insures that the teacher has

not only the knowledge required but also the ability to perform competen-

cies (knowledge and teaching skills) that are essential to successful

teaching. Many traditional teacher education courses have tended to

place emphasis on the theory of teaching rather than focusing upon the

specific teaching skills needed. In PBTE programs, individuals must

demonstrate their ability to perform as teachers in an actual classroom.

Traditional teacher education programs and state certification regula-

tions have focused on giving teachers the necessary number of courses

with the proper course titles in order to meet graduation and certifica-

tion requirements. In PBTE programs, the focus is upon demonstrating

specified competencies essential to successful teaching.

The terms "Competency-Based Teacher Education" (CBTE) and "Per-

formance-Based Teacher Education" (PBTE) are often used synonymously by

educational leaders. Some educators, however, distinguish between the

two terms. The use of the word "competency" emphasizes the fact that

learning in competency-based programs is structured around the identi-

fied and verified competencies needed by teachers. The term "Competency-

Based Teacher Education" is, therefore, appropriate for any such teacher

education program structured upon identified teacher competencies. In

performance-based programs, the work "performance" is used to emphasize

the fact that these programs require teachers to demonstrate their

ability to perform the essential competencies in an actual classroom

setting. The Center's Professional Vocational Teacher Education Curricu-

lar materials are structured upon identified and verified teacher com-

petencies which the learner is required to perform in an actual teaching

situation. Regardless of the terminology preferred by individual prac-

titioners, the preparation of the individual to perform effectively in

the teaching role remains of utmost importance.

CHARACTERISTICS OF PBTE PROGRAMS

The study of widely accepted concepts of PBTE and of many individual

PBTE programs has resulted in the identification of several characteristics

of teacher education programs which are considered essential if the pro-

gram is to be considered a PBTE program. These essential characteris-

tics are:[1]

1. Competencies to be demonstrated by the student are iden-

   tified, based upon what a teacher must know and be able

   to do. The competencies are stated as behaviors which

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[1] Adapted from American Association of Colleges of Teacher Education, Achieving the Potential of PBTE: Recommendations, PBTE Series: No. 16 (Washington, D. C.: American Association of Colleges for Teacher Edu-cation, 1974), pp. 32-33.

can be assessed and are shared with the student at the beginning of the program.

2. <u>Criteria to be used in assessing each specific competency are stated</u>, including the conditions under which assessment will occur and the expected level of mastery. Criteria are also shared with the student at the start of the program.

3. <u>The instructional program focuses upon development and evaluation of the specified competencies</u> by the student.

4. <u>Assessment of the student's competency uses his/her performance in the teaching role as the primary source of evidence.</u> Objective evidence of the student's knowledge related to planning, analyzing, interpreting, or evaluating situations or behavior are also considered.

5. <u>The student's rate of progress through the program</u> is determined by demonstrated competency rather than by time or course completion.

In addition to the above <u>essential characteristics</u> there are several additional <u>desirable characteristics</u> of PBTE programs. These include:

1. Instruction is individualized and personalized.

2. The learning experience is guided by feedback.

3. The program as a whole is systematic.

4. Emphasis is on exit, not on entrance requirements.

5. Instruction is modularized.

6. The student is held accountable for performance.

Although many of these have long been associated with sound instructional practice, they are particularly relevant to PBTE programs.

PBTE AND TRADITIONAL PROGRAMS CONTRASTED

It is evident that a great deal of emphasis is placed upon the iden-
tification, attainment, and assessment of teaching competencies. It

may be helpful in describing PBTE programs to contrast several features

of PBTE programs with features often used to characterize traditional

teacher education programs. In Figure 1, characteristics of seven aspects

of conventional vocational teacher education programs are contrasted

with the same aspects for PBTE programs. These contrasts are presented

as general contrasts between the two types of programs. However, it

should be noted that in examining individual conventional teacher educa-

tion programs, one or more of the program features characterizing PBTE

programs might be found.

CURRENT STATUS OF PBTE: VOCATIONAL TEACHER EDUCATION[2]

As one would expect, the growth of PBTE for vocational teachers has

tended to parallel that of general education. However, there are several

distinct differences. The U.S.O.E. funded Elementary Models Projects,

which served as a catalyst for PBTE at the elementary teacher level,

were perceived as having little direct relevance for vocational and tech-

nical teacher education. Thus, vocational teacher educators were some-

what slower than other groups with regard to setting up PBTE programs.

In fact, much of the current effort in PBTE is, at least in part, based

upon research completed at the Ohio State Center (Cotrell and others,

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[2]Adapted from Curtis R. Finch and James B. Hamilton, "Competency-
Based Instruction for Vocational Teachers: Current Status and Future
Prospects." Paper presented at the Southern Agricultural Education
Conference, Williamsburg, Virginia, 1975.

	CONVENTIONAL	P/CBTE
OBJECTIVES	- GENERAL	SPECIFIC AND BEHAVIORAL
CONTENT	- TEXTBOOK(S), LECTURES	MODULES, MULTI-MEDIA
NATURE OF INSTRUCTION	- GROUP ORIENTED- LECTURES, RECITATIONS	INDIVIDUAL ORIENTED- SELF-PACED STUDY, TUTORING
EVALUATION	- TESTS, QUIZZES, AND WRITTEN EXAMS: NORM-REFERENCED	PERFORMANCE IN SCHOOL SITUATIONS: CRITERION-REFERENCED
FEEDBACK	- SELDOM	FREQUENT
EMPHASIS	- ACHIEVING GRADES- KNOWING	ACHIEVING COMPETENCE- DOING
COMPLETION	- TIME-BASED	PERFORMANCE-BASED

Figure 1. Program Features
of Conventional and P/CBTE Programs

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1972). This data base seems to have served as a starting point for a
number of PBTE programs designed to meet the needs of vocational teachers.
For example, Michigan, Texas, Oregon, Illinois, and Mississippi utilized
the competencies identified by Cotrell and others (1972c) as a basis
for their own curriculum research and development efforts. In many cases,
competencies were verified at state and regional levels and then pro-
grams devised which built upon these competencies.

Current indications are that a number of vocational teacher education
tion institutions are designing and implementing PBTE programs. In fact,
several vocational teacher education departments are leading the way in
this regard (e.g., Temple University, University of Nebraska, Wayne State
University, University of Minnesota).

Response to a recent request by the Ohio State Center for state
directors to nominate institutions to participate in The Center's ad-
vanced testing of performance-based vocational teacher education curri-
cula resulted in responses from 37 states and nominations of some 70
institutions. Letters requesting inclusion in the testing were received
from 40 of these institutions. Other indicators of the PBTE movement's
strength in vocational teacher education are the results from a recent
market survey which the Ohio State Center conducted relative to projected
demand for use of its performance-based curricular materials. Over
three-fourths of the 237 respondents indicated that they had competency-
based teacher education programs in operation or in the planning stage.

For the benefit of those who are considering PBTE program imple-
mentation, it may be meaningful to provide brief descriptions of a few

successful programs. These are representative of the work that is cur-
rently going on across the country.

.At the University of Minnesota, the preservice "Teaching Methods in
Agriculture" is competency-based, individualized and modularized. This
program consists of 29 modules, 23 of which must be satisfactorily com-
pleted prior to student teaching. One learning laboratory is provided
for group discussions and simulated teaching with peers, while another
is equipped with carrels for individual study, listening and viewing.
Facilities are also provided for small group discussions, and viewing
and critiquing of student videotapes as well as tapes of master teachers.
Student performance is assessed under simulated teaching conditions prior
to student teaching and also during student teaching experiences.

University of Nebraska's "Preparation by Prescription for VO-AG
Teachers" focuses on the development of 74 teaching behaviors needed by
first-year teachers of vocational agriculture. To provide students with
the ability to perform these behaviors, 30 challenges (learning tasks
with assignment sheets and audiotape discussions) were developed. Dur-
ing the first five weeks of the "professional semester" students work on
demonstration, writing, explanation and performance tasks on an individu-
alized basis. Each student views "Master Teacher" videotape situations
and participates in at least 10-12 critiqued micro-teaching sessions
prior to the six weeks of student teaching. Following student teaching,
an intensive five-week class-laboratory-workshop Program Planning Course
allows each student to proceed at his/her own pace through 16 challenges
(53 objectives) involving audiotape programmed instruction. A learning
laboratory provides students with opportunities to listen and complete

assignments and provides teacher educators with an opportunity for in-
dividual and small group instruction. Each assignment is graded, and
unsatisfactory performances are redone until judged satisfactory.

A number of other PBTE activities may be mentioned to illustrate
the wide-ranging and pervasive nature of the ongoing effort.

1. Faculty at Wayne State University have established an
    across-the-board PBTE program in a typical four-year voca-
    tional teacher education context. The Wayne State pro-
    gram is most comprehensive and has now been operational
    for several years (Cook and Richey, 1975).

2. At Temple University, a PBTE program has been implemented
    to meet the in-service needs of trade and industrial
    teachers. Perhaps the most notable aspect of Temple's pro-
    gram is that it is entirely field-based. That is, teachers
    may develop competencies in the schools rather than on the
    campus of the University (Adamsky and Cotrell, 1975).

3. University of Michigan's PBTE program is designed primarily
    for aspiring occupational teachers who transfer from com-
    munity colleges. The use of competencies enables students
    to complete baccalaureate degree requirements in a minimum
    amount of time (Vogler, 1975).

4. Seventeen states have mandated the approach as a full new
    or alternative system for teacher education and certification;
    15 others are considering similar action. Several states
    plan full implementation within the next several years.

5. Approximately 500 institutions of higher education have
   pilot programs, about 120 have large operating programs,
   and 15 have institution-wide programs.

6. Thirty-one states have joined the Interstate Certifica-
   tion Project concerned with the mobility of educational
   personnel and interstate reciprocity of teaching certifi-
   cates.   A major focus of the 74-75 program is on trans-
   ferability problems relating to competen:y-based education.

7. Four een :tates have formed a national consortium for the
   purpose c: sharing information, materials, and personnel
   and for i lping member states to develop management sys-
   tems for :ne development and use cf performance-based
   approaches to teacher education and certification.

8. There is a National Clearinghouse on PBTE at the American
   Association of Colleges for Teacher Education in Washing-
   ton, D. C.

9. An Institute for Research and Development of Competency-
   Based Teacher Education Programs has been formed in the
   College of Education at Wayne State University.

Due possibly to the speed with which the PBTE movement has swept the
nation, the pressure of mandates, or a zeal to improve teacher education
programs, many programs and projects presently under development or in
operation have incorporated varying pieces of the form of PBTE, fre-
quently without capturing the real substance of PBTE. There are a wide
range of activities being conducted under the banner of PBTE: modules
without programs; programs without (or with loosely defined) competencies;

competencies without programs; programs which equate field-based with competency-based; programs with competencies but without performance; programs with performance but without competencies, etc. The following section describes some of the varied research and development efforts going on relative to the identification and validation of competencies, the development of curricular materials, the development and implementation of programs, and the development of assessment procedures and instrumentation.

COMPETENCY IDENTIFICATION AND VALIDATION

Patricia Kay (1975) identified three basic procedures for deciding what competencies should be included in a PBTE program. From least to most operational they are: (1) theoretical approaches, (2) task-analytical approaches, and (3) course conversion approaches. Kay says that probably no program has used only one approach that most likely contains elements derived from all three. She further delineates the task-analytic approaches into the following five sub-categories: (1) basic task-analytic procedures, (2) analysis of the teaching performance associated with curriculum packages, (3) school learner needs assessment, (4) analysis of projected teaching roles, and (5) empirical hypothesis generating.

The task or role analysis procedure with its many variations is probably the most commonly used by vocational educators. This approach typically involves identifying the competencies involved in teaching in a given area or at a given level by: (1) conducting a search of the literature; (2) asking teachers working in that area and/or at a given level to describe what they do, what they feel they should be doing; and

what additional skills they feel they need; and (3) asking teacher educators, supervisors, and administrators to describe and verify what teachers do and/or should be doing. Criticism of this approach stems from the fact that this procedure may perpetuate the status quo, since it tends to emphasize competencies which represent what teachers do, and not necessarily what teachers do or should do that, in fact, promotes student learning.

One type of task-analytic approach, the school learner needs assessment approach, appears most desirable and is yet perhaps the most difficult and least useful at this time. While the goal among teacher educators has long been to train teachers in the skills which will result in maximizing student achievement, to date there has been no research which conclusively links particular teacher behaviors to specific student achievement. Nonetheless, efforts to identify competencies using this procedure have been attempted. For example, in Minnesota, The Task Force to Study Programs Leading to Certification for Teachers of Social Studies (1973) started with the identification of "pupil outcomes toward which a competent teacher makes progress." From there, they generated a list of "teacher behaviors which facilitates achievement of pupil outcomes." Finally, they developed a list of "competencies which facilitate those teacher behaviors."

The course conversion procedure is also very frequently employed, particularly in states where a mandate has been issued. This approach commonly results in the translation or reformulation of present courses into new statements of behavioral objectives or competencies. The knowledge and skills a teacher should possess are inferred from the current

course content. As with the task-analytic procedure, this approach tends to perpetuate the status quo and hence is not likely to result in many significant program changes. An advantage of this approach, however, is that it is expedient--changes can be made quickly and at relatively low cost.

The theoretical approach, while conceptually very promising, is undoubtedly the most costly and difficult to utilize. This approach re-quires extensive study and research and a high degree of both technical skill and conceptual expertise among program developers. Theories and models of learning and human behavior are complex and abstract and re-quire a great deal of interpretation and extrapolation. There is also the limitation that theoretically derived programs can only be successful if the underlying theories used are, in fact, accurate descriptions of the realities of the teaching process.

In specifying competencies by any one of these three procedures, there has been an attempt made in most cases to identify teaching com-petencies in each of the three learning domains: cognitive, psychomotor, and affective. Although critics have repeatedly accused PBTE programs of being dehumanizing and mechanistic, in many programs special efforts have been made to include the affective element. One of the categories specified by Benson, et.al. (1972) is "Nurture Humaneness." Florida International University's list of competencies includes "provide posi-tive teacher-student interaction." Weber State's competencies include "interaction skills." The University of Texas at Austin composed each competency using a synthesis of three parts: problem solving, human relations, and job task. Likewise, the affective element is evident

throughout the Cotrell elements and criteria and the University of

Nebraska's NUSTEP program.

One variable involved in competency generation is the level of

specificity of the competency statements. To illustrate, the following

list contains examples of various persons or institutions that have

identified teacher competencies and the number of competencies they iden-

tified:

Michigan State Model Elementary Program	2,700 competencies
Cotrell	384 performance elements
Wright	327 teaching tasks
Courtney	130 items
Walsh	197 competencies
Burke	80 competencies
University of Texas at Austin	27 critical competencies
Florida International University	7 generic competencies
Lehigh University	4 competencies
Hite	2 competencies

Compare the scope of one of Cotrell's 384 competencies, "Write a Lesson

Plan," with the scope of Hite's two competencies: Teachers can state

objectives, and Candidate's pupils demonstrate growth consistent with

stated objectives.

How many original competencies are identified and what level of

specificity is used is not critical, however. What is critical is that

each competency is ultimately broken down to a level of specificity which

is measurable. Each of Cotrell's 384 elements is further broken down

into measurable criteria. For example, the element, "Write a Lesson Plan," is broken down into eight criteria, one of which is "The lesson was based on the specific student performance objectives." Similarly, at the University of Texas at Austin, the 27 critical competencies are broken down into 143 major competencies which, in turn, are broken down to 246 specific competencies. Therefore, while competencies may vary in scope and breadth, the ultimate product of the competency identification process must be measurable criteria if the program which is developed around these competencies is to be, in fact, performance-based.

Another variable is the level of mastery for which the competencies were identified. The Cotrell study attempted to identify all the competencies important to the successful vocational teacher. On the other hand, the State University College of New York at Buffalo and the Frieder model (Okey, Brown and Levie, n.d.) sought to identify competencies for the beginning teacher only. Many institutions have started with existing competency lists and selected from those lists the competencies which specify the level of mastery for which they are training teachers at their particular institution, state, or instructional area.

The validation procedures used by program developers to authenticate the competencies which were identified are, for the most part, similar to the procedures used to identify them. Although the term "validation" is used, it is more nearly a "verification" process. Lists of competencies were (1) compared to other lists; (2) given to educators at all levels and rated as to the importance of each item; (3) subjected to Q-Sort and Delphi techniques; and (4) compared to the literature.

Using these identification and validation procedures, or some com-
bination thereof, a large number of competencies have been generated.
There are lists of competencies generic to all teachers and lists of
competencies needed by teachers of specific areas: Industrial Arts,
Agriculture, Distributive Education, English, Elementary, Social Studies.
What is needed now, according to Warmbrod (1974), is not identification
of more competencies, but an effort to make sense and order out of the
ones we have; that is, determine which ones do make a difference. Re-
search is underway at a number of institutions for the purpose of re-
lating teaching behaviors to student learning. The National Institute of
Education (NIE) is supporting projects in this area by the Far West Lab,
the California Commission for Teacher Preparation and Licensing, and the
Research and Development Center for Teacher Education in Austin. Accord-
ing to Rosenshine (1974), large scale studies about the relationship
between teaching competencies and student achievement are also underway
at the Center for Educational Policy Research at Harvard, the Institute
for Development of Human Research at the University of Florida, the
Stanford Research Institute, the Bureau of Educationally Handicapped, and
at the Purdue Educational Research Center.

MODULE DEVELOPMENT

For most of the PBTE programs currently in existence, specified
competencies have been formed into some type of printed package. Most
packages are called modules, some are called ILPs (Individualized Learning
Packages), and some LAPs (Learning Activity Packages). While modules
are not an essential characteristic of PBTE, their flexibility and adapt-

ability facilitate performance-based instruction. Some PBTE materials

have been given special institutional or other type names (e.g., POP

KITS, WILKITS, WAYNE KITS, MINN MODS). These packages vary in length

from one-page outlines to totally self-contained booklets which include

all necessary information and directions for use. The outline-type

modules serve primarily to make public the competencies; many are similar

to course prospectuses. Since two of the most desirable characteristics

of PBTE are that instruction should be self-paced and individualized,

the most fully developed, self-explanatory modules seem preferable. The

majority of modules developed thus far do not include options for per-

formance of the skill in an actual teaching role; the final experience

or post-assessment tends to be of the paper-pencil variety or the stu-

dent's performance in a simulated situation is assessed using a per-

formance checklist or the resource person's subjective judgment. The

modules produced by The Center for Vocational Education are unusual in

that each module includes (1) a final learning experience which always

involves student performance in an actual school situation, and (2) use

of a "Teacher Performance Assessment Form" which lists detailed criteria

for successful performance. If there is a single point at which existing

programs break down in their quest to become truly competency- or

performance-based, it is probably in the area of final assessment. If

student competency is measured by a paper and pencil test, or if compe-

tencies are specified only to serve as a structure for course development

and not as a basis for assessment, then PBTE is little different than the

traditional course-approach to teacher education.

Existing modules generally have fairly similar elements as follows:

1. A listing of prerequisites

2. Directions for using the module; often this is handled using
    a flow chart

3. Rationale or introduction explaining the importance of the
    competency being covered

4. A listing of performance objectives: terminal and enabling

5. A listing of terminology, resources and materials needed

6. Preassessment--usually a short-answer test

7. Explanation of the activities to be completed in order
    to reach each objective; this is often in chart form

8. Information sheets

9. Feedback devices--most often essay or objective tests

10. Post Assessment--usually a short-answer test, but in some
    cases performance at the planning or simulation levels is
    involved, and occasionally performance in an actual school
    situation

The activities involved in most available modules are structured to
offer the learner a number of alternate routes for reaching an objective.
In addition, optional, enrichment, or quest activities are frequently
included for the learner who desires to pursue a particular subject further.
Activities typically involve reading, role-playing, planning, reacting
to case studies, video-taping performance for critiquing by peers, and
discussion. A number of modules also include recycling activities so that
a student who does not achieve a particular objective initially can get fur-
ther information or practice without repeating the exact same activities.

Module development models are proliferating. Most of these models conscientiously practice what they preach. For example, Heath at Oregon State University and Houston, et.al. (1972) have developed modules on writing modules; Kapfer and Ovard (1971) have developed an Instructional Learning Package on preparing and using ILPs; and Hyder (1971) has developed a Learning Activity Package on constructing LAPs. Drumheller (1971), Frantz (1974), Hauenstein (1973), and Silvius and Bohn (1975) have contributed to the area by producing documents explaining systems approaches to curriculum development. Arends, Masla, and Weber (1973) have produced the second edition of their CBTE module development handbook. Others, such as Fardig (1975), have produced handbooks or guides for the development of modules for secondary and post-secondary technical subject matter instruction. Additionally, many modules which have been developed by teacher education institutions as part of their PBTE programs are available and can serve as models.

DEVELOPMENT OF THE CENTER'S PBTE CURRICULUM

The Center for Vocational Education, The Ohio State University, has developed a Performance-Based Vocational Teacher Education Curriculum especially designed for use in implementing pre-service and/or in-service PBTE programs in vocational education. These PBTE curricular materials consist of 100 Professional Vocational Teacher Education Modules, a Student Guide, and a Resource Person Guide. The development of this curriculum involved three major phases: (1) the research base, (2) development of curricular materials, and (3) testing and revision of materials.

These three developmental phases, to be followed by a dissemination phase, are shown in diagram form in Figure 2.

THE RESEARCH BASE

Center work began with two research projects to determine the essential teacher competencies of vocational teachers. Approximately 1,000 vocational teachers, supervisors, and teacher educators were involved in the identification and verification of 384 performance elements, or competencies, considered essential for vocational teachers.

In the first phase of the study, essential competencies needed by teachers of conventional programs were identified. These were the teaching competencies needed by secondary and/or post-secondary teachers in agricultural, business and office, distributive, health occupations, home economics, technical, and trade and industrial education. This study resulted in the identification of 256 common competencies (competencies needed by teachers in two or more of the seven service areas studied).

The second phase of the research study sought to determine the essential teacher competencies needed by teacher coordinators in cooperative programs, namely off-farm agricultural, wage-earning home economics, office occupations, special needs, and trade and industrial education. A total of 385 teacher competencies were identified including those identified in Phase I of the study. These competencies were clustered into ten categories representing ten areas of vocational teacher responsibility. The findings of Phases I and II were then merged into one comprehensive list of 390 competencies and later reduced to a total of 384

```
┌─────────────────────┐              ┌─────────────────────────┐
│Analyze Vocational   │              │Analyze Vocational Teacher-│
│Teacher Performance  │              │Coordinator Performance  │
│Elements             │              │Elements                 │
└─────────────────────┘              └─────────────────────────┘
```

```
                    ┌──────────────────────┐
                    │   Merge Required     │
                    │ Performance Elements │
                    └──────────────────────┘
```

Research
Phase

```
              ┌──────────────────────────────┐
              │   Organize Performance       │
              │ Elements into 10 Categories  │
              └──────────────────────────────┘
```

```
              ┌──────────────────────────────┐
              │   Develop Criteria for Each   │
              │   Performance Element         │
              └──────────────────────────────┘
```

```
        ┌──────────────────────────┐     ┌─────────────────────┐
        │ Cooperative Development  │     │ Oregon State Uni.,  │
        │   of Prototype Modules   │     │ Uni. of Missouri,   │
        └──────────────────────────┘     │ and The Center      │
                                         └─────────────────────┘
```

```
┌───────────────┐    ┌───────────────┐    ┌───────────────┐
│   Conduct     │    │   Conduct     │    │  Consultant   │
│ Psychometric  │    │ Preliminary   │    │   Module      │
│  Refinement   │    │   Testing     │    │   Reviews     │
└───────────────┘    └───────────────┘    └───────────────┘
```

```
                    ┌──────────────────┐
                    │  Revise Module   │
                    └──────────────────┘
```

Development
and Testing
Phase

```
                    ┌──────────────────┐
                    │ Conduct Advanced │
                    │    Testing       │
                    └──────────────────┘
```

```
                    ┌──────────────────┐
                    │  Refine Module   │
                    └──────────────────┘
```

Dissemination
and Implementation
Phase

```
                    ┌──────────────────────┐
                    │ Disseminate Materials│
                    │     and Assist       │
                    │  With Implementation │
                    └──────────────────────┘
```

```
┌─────────────────────┐              ┌─────────────────────────┐
│Utilize Materials    │              │Utilize Materials        │
│in Preservice        │              │In-service Vocational    │
│Vocational Teacher   │              │Teacher Education        │
│Education Programs    │             │Programs                 │
└─────────────────────┘              └─────────────────────────┘
```
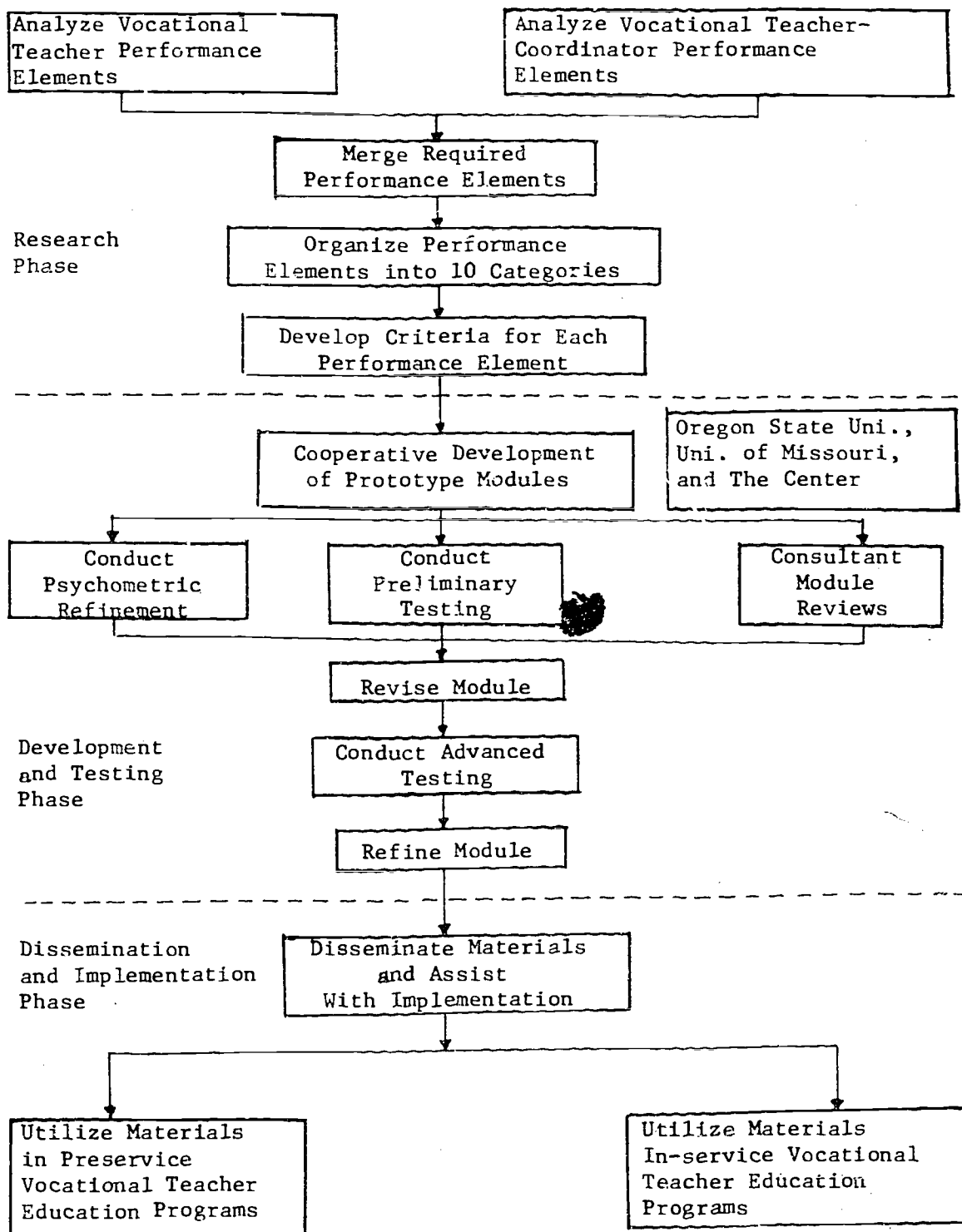
Figure 2.   Phases of the PBVTE Curricula Development

through elimination of duplication. These vocational teacher competencies
are organized into the following categories:

A -- Program Planning, Development, and Evaluation

B -- Instructional Planning

C -- Instructional Execution

D -- Instructional Evaluation

E -- Instructional Management

F -- Guidance

G -- School-Community Relations

H -- Student Vocational Organizations

I -- Professional Role and Development

J -- Coordination

Finally, a set of performance-oriented general objectives specifying
the task and the general criteria for evaluating a teacher's performance
of the stated activity was developed.[3]

DEVELOPMENT OF CURRICULAR MATERIALS

Following the identification of the 384 vocational teacher compe-
tencies, work was initiated to develop the necessary curricular materials
for implementing PBTE programs at the preservice and in-service levels
for all vocational service areas. The curricular materials are in the
form of individualized learning packages, or modules, each of which has
as its base one or more or the 384 competencies. By basing the modules
on the verified competencies, there is solid assurance that the objectives

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[3]Calvin Cotrell, et.al., Model Curricula for Vocational and Techni-
cal Teacher Education: Report No. V--General Objectives, Set II (Columbus,
Ohio: The Center for Vocational Education, The Ohio State University,
1972).

of the modules actually represent competencies needed by vocational teachers.

To further assure that the materials developed reflect the actual needs of vocational teachers and that the materials would be acceptable by all vocational areas, the module development process was structured to ensure maximum involvement of persons actively engaged in vocational teacher preparation. Each module was originally developed in cooperation with vocational teacher education faculties at Oregon State University in Corvallis, and University of Missouri in Columbia. Center staff worked with the writing teams at the institution sites.

An organized procedure of development, review, and revision was followed by the writing teams at each of these sites during the initial module development. Following the development of each module to the satisfaction of the faculty at the site, the module was then forwarded to the other site to be reviewed and critiqued by their faculty. Each module also was reviewed and critiqued by Center staff. Finally, a synthesis of all faculty and staff reviews was developed, and the module was revised by Center staff. From this process, 118 Professional Vocational Teacher Education Modules were developed and revised in preparation for initial testing.

TESTING AND REVISION OF THE MATERIALS

Initial testing of the performance-based curricular materials was carried out at Oregon State University, University of Missouri-Columbia, and Temple University. Each of the 118 modules was used by a minimum of 10 pre-service and/or in-service vocational teachers at one or more of

the test sites. Reaction forms were completed by each student for each

module used and by each faculty member or resource person for each module

they administered. In addition, in-depth taped interviews were conducted

to clarify and gain additional feedback from students and resource per-

sons for a sampling of the modules tested.

Concurrently, the California Testing Bureau of McGraw-Hill conducted

psychometric refinement of the objectives and assessment instruments

in each of the 118 modules. Several individual modules and entire cate-

gories of modules were also reviewed and critiqued by independent con-

sultants and subject matter experts during this phase of the study.

Using the inputs from students and resource persons, the psycho-

metric refinements, and the consultant reviews, each of the modules un-

derwent major revision of content and format. A rigorous revision process

was employed utilizing module revision teams of three persons each

and standardized procedures to assure consideration of all inputs and

to maintain standards of quality and uniformity in the materials. Sev-

eral recombinations of performance elements were suggested by module

users during the preliminary testing phase. Incorporation of these

suggestions resulted in a reduction from a total of 118 modules to 100

modules.

Advanced testing of the materials is being conducted at 17 sites

in diverse geographic areas and settings as well as several differing

PBTE program structures. Feedback from each individual and each re-

source person using the modules is being gathered to further improve

the materials. User feedback will also provide information as to the

characteristics of the user and how well the materials serve his/her

needs. Following completion of the advanced testing and refinement of the materials, the Center's PBTE curriculum will be released for publication and dissemination.

A concerted effort has been made in the development of the modules to keep them consistent with the essential principles and concepts of performance-based teacher education. At the same time, the instructional materials have been made as attractive and convenient to the learner as possible. The following are some of the major features included in the module design:

1. Each module focuses on one or more verified vocational teacher competencies.

2. Modular design provides maximum flexibility for designing individualized programs.

3. Learning experiences allow for individual or group instruction.

4. All modules are suitable for preservice and/or in-service education.

5. Most modules are self-contained.

6. Optional resources include printed and multi-media materials.

7. The design permits use of local situation-specific materials.

8. Each module culminates with student assessment of the competency in an actual school situation.

The Center's instructional modules encompass the learning of a single identified objective or a small group of related objectives that can be learned effectively together. All of the learning activities presented in each module are directed toward achievement of the stated

objective(s). Basically linear in instructional design, there is,

however, provision for individualized learning activity options and for

the by-passing of learning activities by trainees who have acquired the

designated competence through previous experience.

The instructional module consists of a number of components, each

supporting and contributing to the strength of the whole. While the

individual module is intended to be used as an instructional entity,

the resource person may enrich the learning experiences and modify the

instructional mode to meet the needs of individual learners. Although

module structure varies somewhat depending on the subject matter con-

tent, the typical instructional sequence is given below. A graphic

representation of the sequence is present in Figure 3.

1. A statement of the terminal instructional objective

   is provided for the student.

2. Cognitive knowledge necessary for the performance of

   the competence and its application is provided.

3. Opportunity for planning experiences is provided.

4. Opportunity for practice performance or simulated per-

   formance is provided.

5. Optional activities are suggested (for enrichment and

   for trainees with special interests).

6. Alternate activities are given for activities that may

   be difficult to complete (e.g., activities calling for

   the use of peers).

7. The trainee may select learning experiences depending

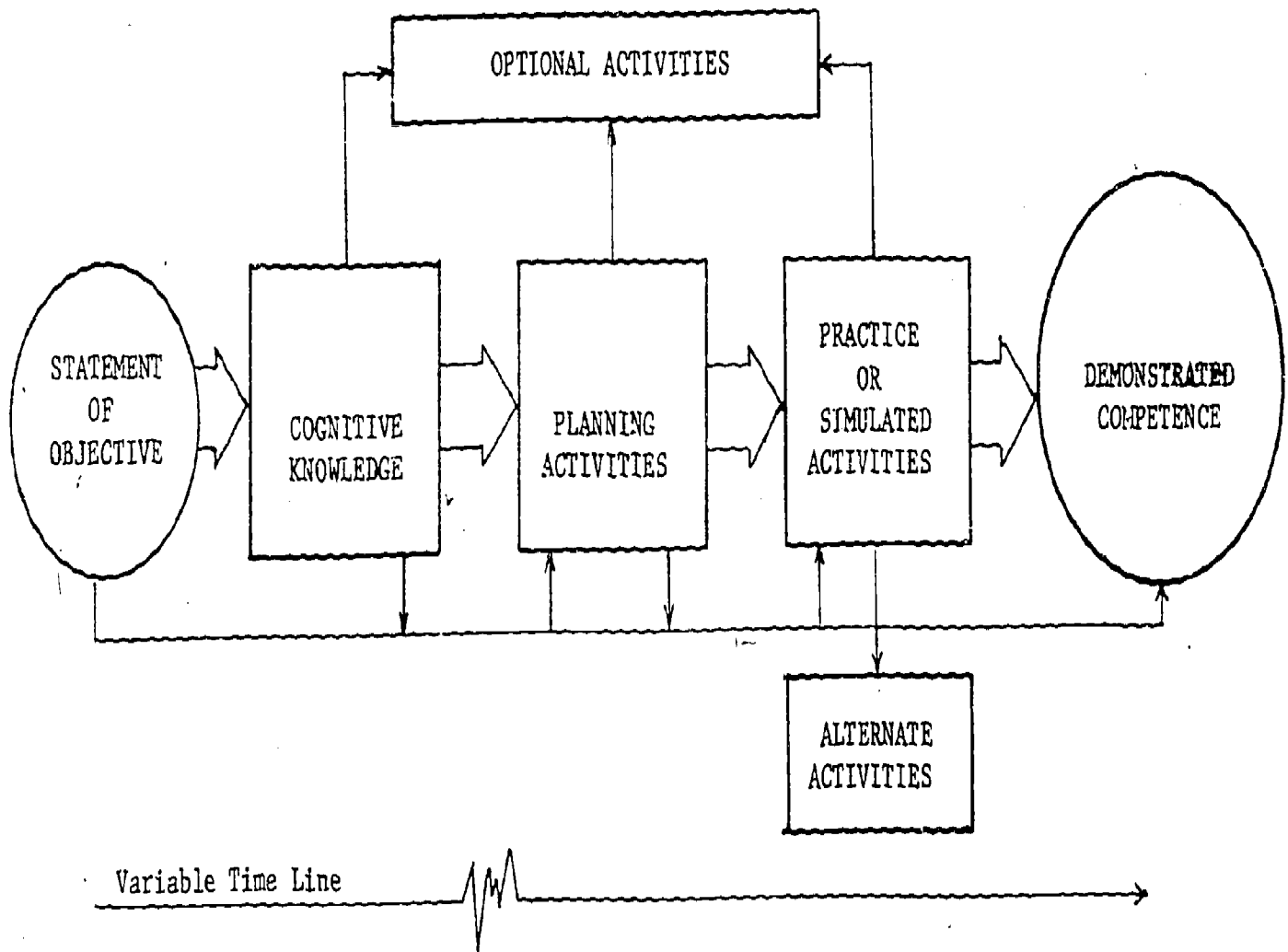   on previous experience or personal need.

Figure 3. Typical Instructional Sequence for CVE Modules

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8. Feedback and reinforcement are provided the trainee
   at the end of each learning experience.

9. Final demonstration of the specified competence takes
   place in an actual school situation.

10. The already competent trainee may "test out" of the
    module by going directly to the final experience.

PBTE AS AN INSTRUCTIONAL SYSTEM

Performance-based teacher education is conceived by Center staff as
a system for the development and delivery of the instructional program--
from identification of teacher competencies to teacher professional
effectiveness. In this systematic approach, each component supports the
others and each, in turn, is affected by the requirements of others. All
of the components are directed toward providing an instructional gestalt
in which the resource person and teacher trainee can work together coopera-
tively in the process of learning. Following is a brief description of
the necessary components in this process, with a graphic representation
given in Figure 4.

1. The system should be built on a group of verified com-
   petencies (e.g., Cotrell's list of 384 competencies needed
   by vocational teachers).

2. Overall structure and specific format of instructional
   materials must be developed.

3. Instructional modules should form the instructional core
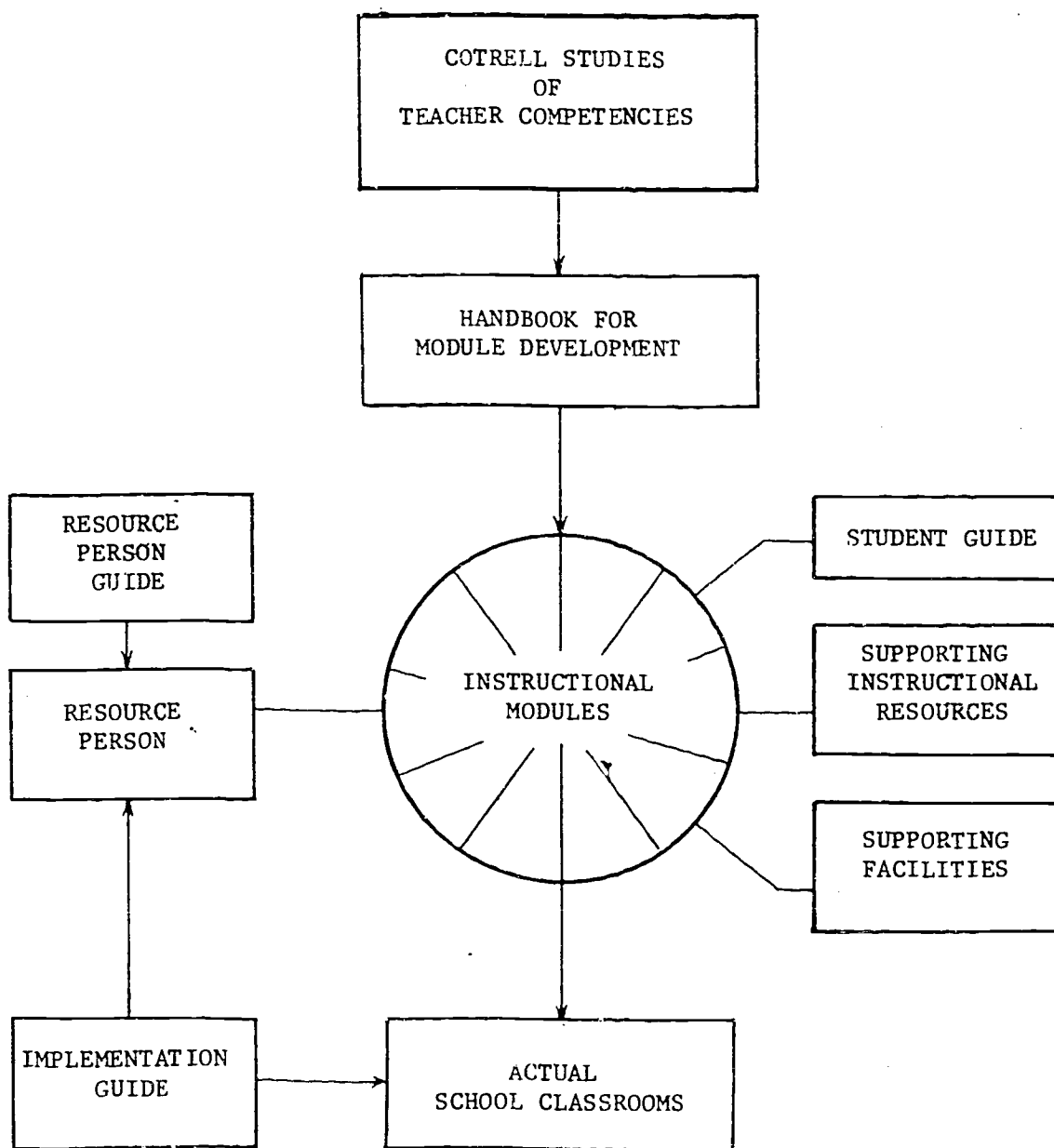   of the system.

Figure 4.   CVE Performance-Based Vocational Teacher Education
Delivery System

4. A student guide is needed to orient trainees to the PBTE approach.

5. Supporting instructional resources, including printed materials, multi-media materials, etc., need to be developed.

6. Supporting facilities needed include a resource center, videotaping studio, viewing room, conference rooms.

7. The resource person is an integral and essential component of the system. The resource person acts as advisor, helper, coordinator, and evaluator.

8. A resource person's guide helps the teacher educator to function in a new and perhaps unfamiliar role.

9. The implementation guide assists in the processes of organizing and managing the PBTE program.

10. Actual school classrooms are essential for the final demonstrated performance of the competency.

MODULE EVALUATION

Evaluation of the Center's materials is a continuous process. It begins as the modules are conceptualized and continues as the modules are designed, developed, field tested, and implemented in a teacher education program. Input from evaluation may be informal and subjective, or formal and empirical. Ideally, evaluation is a never-ending effort.

Each curriculum designer should develop evaluative criteria based on the underlying educational philosophy and approach of the performance-based teacher education in which he or she is working. Many criteria,

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however, will be common to all PBTE instructional materials. The three

evaluation instruments in Appendixes A, B, and C have proven useful in

materials-development projects and may be adapted by program constructors

to fit their particular needs. The first (Appendix A) asks broad ques-

tions about the bases and content on which the module is constructed.

The second (Appendix B) is a more specific checklist, designed to focus

on each element of the module. The third (Appendix C) is a very detailed

device that may be especially useful in the final refinement stages of

module development.

Appendix A.   Evaluation of Performance-Based Instructional Packages

1.   Is it competency based?

   a.   Does the terminal objective require actual performance of a
        task or tasks of the occupation?

   b.   Is there a series of explicitly stated objectives leading to
        the terminal performance?

2.   Does it treat the "Why" and "How" of the performance?

3.   Do the learning experiences deliver on the objective?

   a.   Is there a series of logically sequenced learning experiences
        leading to performance of the actual task or tasks?

   b.   Are the learning activities reasonable expectations considering
        demands for physical resources, student time, and resource per-
        son time?

4.   Does it culminate with assessment of actual performance with a com-
     prehensive listing of performance criteria provided?

5.   Does it contain clearly stated, easy to follow directions?

6.   Is flexibility provided for the student to select learning experiences
     appropriate to individual needs?

7.   Does it have a high degree of utility--can it realistically be im-
     plemented in the field?

8.   Is it attractive?

Appendix B. Module Assessment Checklist

MODULE NO._____   MODULE TITLE:_____

ELEMENTS	YES	NO	?	COMMENTS
1. The <u>introduction</u>:				1.
a. describes what the student will learn.				a.
b. tells the student why the competency is needed.				b.
2. The <u>directions</u> are correct and explicit.				2.
3. The <u>objectives</u> are correctly stated.				3.
4. The <u>learning activities</u>:				4.
a. are consistent with the objectives.				a.
b. provide sufficient opportunity for the student to learn.				b.
c. are practicable and feasible.				c.
d. are appropriate to the student level.				d.
e. are clearly and succinctly stated.				e.
f. include a variety of learning modes.				f.
g. are limited to the necessary knowledge and skills.				g.
h. are free from harmful side effects.				h.
i. are largely self-instructional.				i.
j. provide student reinforcement.				j.
k. provide practice of skills in controlled settings.				k.
l. provide simulated or real-world tryout of competency.				l.
5. <u>Student self-checks</u>:				5.
a. are directly related to the objective				a.

ELEMENTS	YES	NO	?	COMMENTS
b. cover the required knowledge				b.
c. provide the student with feedback				c.
6. The <u>instruction sheets</u>:				6.
a. are clearly and correctly titled.				a.
b. are written at the student's level.				b.
c. provide the essential information.				c.
d. include appropriate instructional illustrations.				d.
e. are adequate in scope and depth.				e.
7. The <u>instructor's final checklist</u>:				7.
a. is in correct format.				a.
b. measures student acheivement of the module objectives.				b.
c. is limited to the competencies stated in the objective.				c.
d. states the desired performance in unambiguous terms.				d.
e. is based on observable student performance or the product of performance.				e.

Appendix C. Module Review Checklist

MODULE TITLE:_____   REVIEWED BY:_____

Language

1. The terminology is defined in the introduction or in-
    formation sheets.   YES   NO

2. The terminology is consistent throughout.   YES   NO

3. The directions are simply and clearly stated, and complete. YES   NO

4. The performance objectives are stated in measurable terms. YES   NO

5. The directions clarify the performance objectives; they
    are not simply a restatement of the performance objectives. YES   NO

6. The directions clarify what the performance is, how to
    do it, and why it is necessary.   YES   NO

7. The language is lively and interesting; it is not merely
    mechanical.   YES   NO

8. The language is geared to the level of an average reader. YES   NO

Learning Experiences

1. Learning experiences are sequenced logically.   YES   NO

2. Learning experiences do not overlap.   YES   NO

3. Learning experiences lead to competency in the perfor-
    mance objective.   YES   NO

4. All required readings contribute directly to attaining
    the objective.   YES   NO

5. All required activities contribute directly to attaining
    the objective.   YES   NO

6. When an activity may be difficult to implement, alter-
    nate ways of completing the activity are provided.   YES   NO

7. Optional learning activities are provided to give depth
    and flexibility to the learning experience.   YES   NO

8. A range of activities is provided to accommodate students
    of different abilities, needs, and interests.   YES   NO

9. A range of activities is provided to allow for both individual and group work. YES NO

10. Role playing activities include role descriptions and situations to guide anyone playing a role outside his/her own frame of reference. YES NO

11. The learning activities are varied and interesting, with a minimum of repetition from one learning experience to another. YES NO

Information Sheets (Criteria in the "Language" section apply here)

1. The module is self-contained, if possible, and practical. YES NO

2. Information sheets contain up-to-date information. YES NO

3. Information sheets are concrete and tangible, not just vague generalities or lists of criteria; they tell "how-to." YES NO

4. Information sheets are relevant to vocational education, with examples drawn from various service areas of vocational education. YES NO

5. Outside resources require less than 30 pages of reading per learning experience. YES NO

6. Outside resources are not more than 10 years old (unless they are of exceptional value). YES NO

7. There are three or fewer outside references per learning experience. YES NO

8. Outside references are standard enough that they should be readily available to any module user. YES NO

Self-Checks, Model Answers, Checklists

1. Self-checks are not simply rote activities, and are not obvious without the information provided in the learning experience. YES NO

2. Self-checks comprehensively reflect the information provided in the learning experience. YES NO

3. Model answers (which do more than parrot the information in the readings) are provided to reinforce learning. YES NO

4. Checklists are stated in observable, performance terms.   YES   NO

5. Checklists include all criteria necessary for successful
   performance.   YES   NO

6. Checklists actually assess the learner's progress toward
   the objective.   YES   NO

7. Alternatives to peer evaluation are provided for those
   learners who cannot arrange to work with peers.   YES   NO

8. Each feedback device includes a stated level of perfor-
   mance.   YES   NO

9. Evaluations provide for recycling if the level of per-
   formance is not met.   YES   NO

Media

1. The media is applicable to all vocational service areas.   YES   NO

2. The media illustrates, clarifies, reinforces, or extends
   the concepts introduced in the module; it doesn't simply
   repeat them.   YES   NO

3. The media is realistic, i.e., the teacher, students and
   real school setting are believable.   YES   NO

4. The length of the media is reasonable (10 to 20 minutes).   YES   NO

5. The media is interesting visually/aurally.   YES   NO

6. The media is clear visually/aurally.   YES   NO

7. If the media includes an exemplary instructor, the in-
   structor:

   a. relates well with students.   YES   NO

   b. uses student feedback.   YES   NO

   c. uses media or teaching aids where appropriate.   YES   NO

   d. presents information geared to the needs of the stu-
      dents.   YES   NO

   e. teaches on the basis of up-to-date learning theory.   YES   NO

8. The media is free from racial and sex bias.   YES   NO

9. The media is lively and action-oriented.   YES   NO

10. The information is presented in a logical manner.   YES   NO

Overall

1. The module delivers on the objectives.   YES   NO

2. The module meets "new format" specifications.   YES   NO

3. Module is internally consistent (objs., directions, feed-
   back devices, etc. do not contradict each other, directly
   or indirectly).   YES   NO

4. No learning experience other than the final learning ex-
   perience requires performance in a real school situation.   YES   NO

5. Opportunity is provided for practicing any performance
   which must be executed in the real world.   YES   NO

6. The final learning experience requires performance in an
   actual school situation.   YES   NO

7. The learning experiences are realistic; i.e., they do not
   require an unreasonable amount of prior knowledge or of
   time on the part of the learner.   YES   NO

8. The module is easy to implement; i.e., it does not require
   an unreasonable amount of the resource person's time.   YES   NO

9. Learning activities, information sheets, case studies, re-
   sources, etc. provide across-the-board representation of
   the various service areas in vocational education.   YES   NO

10. An introductory statement is provided which motivates the
    student by explaining why the competency is needed, not
    simply what the competency consists of.   YES   NO

11. An introductory statement is provided which places the
    module in a frame of reference with other modules in the
    category, and with the broad theory of vocational educa-
    tion.   YES   NO

12. All necessary prerequisite competencies are listed.   YES   NO

REFERENCES

Adamsky, Richard and Calvin C. Cotrell. "Program VITAL: A Futuristic
    Inservice Model for Vocational Teacher Education." Journal of
    Industrial Teacher Education, Vol. 12 (Summer, 1975), 39-46.

American Association of Colleges for Teacher Education. Performance-
    Based Teacher Education: An Annotated Bibliography. PBTE Series:
    No. 7. Washington, D. C.: AACTE and Eric Clearinghouse on Teacher
    Education, 1972.

American Association of Colleges for Teacher Education. Achieving the
    Potential of PBTE: Recommendations. PBTE Series: No. 16. Wash-
    ington, D. C.: American Association of Colleges for Teacher Edu-
    cation, 1974.

Anderson, Dan W., et.al., eds. Competency-Based Teacher Education.
    Berkeley, California: McCutchan Publishing Corporation, 1973.

Andrews, Theodore. "Atlanta or Atlantis? PBTE and State Implementation."
    Journal of Teacher Education, Vol. 24 (Fall, 1973), 232-237.

Andreyka, Robert E., and Del Shirley. Foundations for Vocational Teacher
    Education Curricula. Columbus, Ohio: The Center for Vocational
    Education, The Ohio State University, 1972.

Arends, Robert L. A Brief Summary of CBTE. 1971. ERIC ED 100 866
    (Microfiche)

Arends, Robert L., et.al. Handbook for the Development of Instructional
    Modules on Competency-Based Teacher Education Programs. Buffalo,
    New York: The Center for the Study of Teaching, 1973.

Baird, Hugh and Pelt Dwayne. "Some Organizational Problems Encountered
    in Implementing Competency-Based Education." Paper presented at
    American Educational Research Association Meeting, New Orleans,
    Louisiana, March, 1973.

Barton, Grant E. "Designing Competency Statements." Audiovisual Instruc-
    tor, January, 1972, pp. 16-18.

Benson, M. James, et.al. "The Industrial Education Teacher's Professional
    Tasks." Memonomie, Wisconsin: University of Wisconsin at Stout,
    1972.

Berty, Ernest. The State of the Art of CBTE. A Review of Selected
    Literature. 1975. ERIC ED 100 900 (Microfiche)

Bowles, F. Douglas. "Competency-Based Teacher Education? The Houston
    Story." Educational Leadership, March, 1973, pp. 510-12.

70

Broudy, Harry. A Critique of PBTE. PBTE Series: No. 4. Washington, D. C.: American Association of Colleges for Teacher Education, 1972.

Bullough, Robert V. and Donald W. Brumbaugh. The Development of A Competency-Based Model for Use in Industrial Technology. Salt Lake City, Utah: Division of Instructional Systems and Learning Resources, Utah University, 1974.

Burdin, Joel. Three Views of CBTE: 1. Theory. CBTE Promise and Problems. Bloomington, Indiana: Phi Delta Kappa Education Foundation, 1974.

Burns, Richard W. and Joe Lars Klingstedt. Competency-Based Education: An Introduction. Englewood Cliffs, New Jersey: Educational Technology Publication, 1973.

Conant, James B. The Education of Teachers. New York: McGraw Hill, 1968.

Cook, Gordon M. Why Competency-Based Teacher Education? 1973. ERIC ED 074 030 (Microfiche)

Cook, Fred S. and Rita C. Ritchey. "A Competency-Based Program for Preparing Vocational Teachers." Journal of Industrial Technical Education, Vol. 12 (Summer, 1975), 29-38.

Cotrell, Calvin, et.al. Model Curricula for Vocational and Technical Teacher Education: Report No. I--Performance Requirements for Teachers. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1971a.

Cotrell, Calvin, et.al. Model Curricula for Vocational and Technical Teacher Education: Report No. II--General Objectives, Set I. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1971b.

Cotrell, Calvin, et.al. Model Curricula for Vocational and Technical Teacher Education: Report No. III--Performance Requirements for Teacher-Coordinators. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1972a.

Cotrell, Calvin, et.al. Model Curricula for Vocational and Technical Teacher Education: Report No. IV--A Foundation for Performance-Based Instruction. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1972b.

Cotrell, Calvin, et.al. Model Curricula for Vocational and Technical Teacher Education: Report No. V--General Objectives, Set II. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1972c.

Crawford, L. C. A Competency Pattern Approach to Curriculum Construction
in Distributive Teacher Education. Washington, D. C.: U. S. Office
of Education, December, 1967.

Daniel, K. Fred. Performance-Based Teacher Certification: What is It
and Why do we Need It? Tallahassee, Florida: State Department of
Education, 1970.

Day, James F. "Let's Hear it for PBTE: A Resounding No! Kappa Delta
Pi, Vol. 2 (1974), 38-42.

Dodl, Norman R. "Selecting Competency Outcomes for Teacher Education."
Journal of Teacher Education, Vol. 24 (Fall, 1973), 194-198.

Drumheller, Sidney J. Handbook of Curriculum Design for Individualized
Instruction: A Systems Approach. Englewood Cliffs, New Jersey:
Educational Technology Publication, 1971.

Elam, Stanley. Performance-Based Teacher Education: What is the State
of the Art? PBTE Series: No. 1. Washington, D. C.: American
Association of Colleges for Teacher Education, 1971.

Elfenbein, Iris. Performance-Based Teacher Education Programs: A Com-
parative Description. PBTE Series: No. 8. Washington, D. C.:
American Association of Colleges for Teacher Education, 1972.

Fardig, Glen E. Handbook for Vocational Education Modules. Frankfort,
Kentucky, State Department of Education, April 1975.

Finch, Curtis R. and James B. Hamilton. "Performance-Based Teacher Edu-
cation Curricula: Implications for Program." Paper presented at
the Seventh Annual National Vocational and Technical Teacher Educa-
tion Seminar, Dallas, Texas, October, 1973.

Finch, Curtis R. and James B. Hamilton. "Issues in the Implementation
of Performance/Competency-Based Teacher Education Programs." Journal
of Industrial Teacher Education, Vol. 12 (Summer, 1975), pp. 14-21.

Finch, Curtis, et.al. Performance-Based Curricula for Vocational Teachers.
Columbus, Ohio: The Center for Vocational Education, The Ohio State
University, 1974.

Flanders, Ned A. "The Changing Base of Performance-Based Teaching."
Phi Delta Kappan, Vol. 55 (January, 1974), 312-315.

Fortney, Howard M. Curriculum Development in Vocational Education: The
State of the Art. Montgomery, Alabama: Alabama State Department
of Education, Division of Vocational Education and Community Col-
leges, 1974.

Frantz, Nevin R., Jr. Individualized Instructional Systems for Vocational and Technical Education: A Series of Instructional Modules. Athens, Georgia: Vocational Instructional Systems, 1974.

Gay, L. R. and K. F. Daniel. "Accreditation and Performance-Based Teacher Education." Educational Technology, Vol. 12 (1972), 10-14.

Gentry, Castelle and Charles Johnson. A Practical Management System for Performance-Based Teacher Education. PBTE Series: No. 15. Washington, D. C.: American Association of Colleges for Teacher Education, 1974.

Getz, Howard, et.al. "From Traditional to Competency-Based Teacher Education." Phi Delta Kappan, January, 1973, pp. 300-302.

Gillie, Angelo C. "A Plea for Caution." American Vocational Journal, Vol. 69 (April, 1974), 30-31.

Goldhammer, Keith and Robert E. Taylor. Career Education: Perspective and Promise. Columbus, Ohio: Charles E. Merrill Publishing Company, 1972.

Haberman, Martin. "Behavioral Objectives: Bandwagon or Breakthrough." Journal of Teacher Education, Vol. 19 (Spring, 1968), 91-94.

Halfin, Harold H. and Wayne E. Courtney. Professional Education Competencies of Secondary Vocational Instructors. Study No. 2. Technical Report. Corvallis, Oregon: Oregon State University, Division of Vocational, Adult, and Community College Education, July, 1971.

Hamilton, Phyllis. Competency-Based Teacher Education. Washington, D. C.: United States Office of Education, 1973.

Hauenstein, A. Dean. "Developing Performance-Based Courses." Man-Society-Technology, Vol. 32 (January, 1973), 185-188.

Hauenstein, A. Dean. Course Planning for Vocational Education. Miami, Florida: Florida International University, 1974.

Heath, Larry. "Individualized Curriculum for Electronics (ICE)." Corvallis, Oregon: Oregon State University, n.d.

Heath, Robert W. and Mark A. Nielson. "The Research Basis for Performance-Based Teacher Education." Review of Educational Research, Vol. 44 (Fall, 1974), 463-481.

Hite, Herbert. "The Cost of Performance-Based Teacher Education." Journal of Teacher Education, Vol. 24 (Fall, 1973), 221-224.

Houston, W. Robert. What's in a Name? Competency/Performance/or Proficiency-Based Teacher Education. 1972. ERIC ED 087 740 (Microfiche)

Houston, W. Robert. _Performance Education: Strategies and Resources for Developing a CBTE Program._ New York: Multi-State Consortium of PBTE and New York State Education Department, 1972.

Houston, W. Robert. _Exploring Competency-Based Education._ Washington, D. C.: Office of Education, 1974.

Houston, W. Robert. _Resources for Performance-Based Education._ Albany, New York: Multi-State Consortium on PBTE and New York State Education Department, 1973.

Houston, W. Robert and Robert B. Howsam, eds. _Competency-Based Teacher Education: Progress, Problems, and Prospects._ Chicago, Illinois: Science Research Associates, Inc., 1972.

Houston, W. Robert, et.al. _Competency-Based Teacher Education Program Design: A Simulation._ Westfield, Texas: Competency-Based Instructional Systems, n.d.

Houston, W. Robert, et.al. _Developing Instructional Modules._ Houston, Texas: University of Houston, College of Education, 197 .

Howsam, Robert B. "Some Basic Concepts." _Today's Education,_ April, 1972, pp. 33-40.

Howsam, Robert B. "Management of PBTE Programs." _Journal of Teacher Education,_ Vol. 24 (Fall, 1973), 213-219.

Hyder, Elizabeth. "Module on Constructing LAPS." Washington County Schools, 1971.

Impellitteri, Joseph T. and Curtis R. Finch. _Review and Synthesis of Research on Individualizing Instruction in Vocational and Technical Education._ Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1971.

Johnson, Charles E. _Implementing CBTE,_ 1974. ERIC ED 092 537 (Microfiche)

Joyce, Bruce L. _The Promise of Performance (Competency)-Based Education: An Analytical Review of Literature and Experience._ 1971. ERIC ED 083 147 (Microfiche)

Joyce, Bruce L., et.al. _Performance-Based Teacher Educator Design Alternatives: The Concept of Unity._ PBTE Series: No. 14. Washington, D. C.: American Association of Colleges for Teacher Education, 1974.

Kapfer, Philip G. and Glen F. Ovard. _Preparing and Using Individualized Learning Packages for Ungraded, Continuous Progress Education._ Englewood Cliffs, New Jersey: Educational Technology Publications, 1971.

Kay, Patricia M. What Competencies Should Be Included in a C/PBTE Program? PBTE Technical Assistance Paper Series: No. 1. Washington, D. C.: American Association of Colleges for Teacher Education, 1975.

Kay, Patricia M. and Benjamin Rosner. "Are Teacher Colleges Really Prepared to Handle Competency-Based Teacher Education?" Journal of Research and Development in Education, Vol. 7 (Fall, 1973), 47-53.

Kelley, Edgar A. Three Views of CBTE: 3. University of Nebraska. CBTE: Can it be Achieved? Fastback 50. Bloomington, Indiana: Phi Delta Kappa Foundation, 1974.

Kibler, Robert J., et.al. Behavioral Objectives and Instruction. Boston, Massachusetts: Allyn and Bacon, 1970.

Kirst, Michael. Issues in Guidance for Performance-Based Teacher Education. PBTE Series: No. 13. Washington, D. C.: American Association of Colleges for Teacher Education, 1973.

Korner, James D. The Miseducation of American Teachers. Boston: Houghton-Mifflin, 1963.

Lindsey, Margaret. "Performance-Based Teacher Education: Examination of a Slogan." Journal of Teacher Education, Vol. 24 (Fall, 1973), 180-186.

Mager, Robert F. Measuring Instructional Intent or Got a Match? Belmont, California: Lear Siegler, Inc., 1968.

Maxwell, W. David. "PBTE: A Case of the Emperor's New Clothes." Phi Delta Kappan, Vol. 55 (January, 1974), 306-311.

McDonald, Frederick. "The National Commission on Performance-Based Education." Phi Delta Kappan, Vol. 55 (January, 1974), 296-298.

Massanari, Karl. "Memorandum to Participants in Regional Invitational Conference on PBTE." Washington, D. C.: American Association of Colleges for Teacher Education, 1973.

Merrow, John G. Politics of Competence: A Review of Competency-Based Teacher Education. Washington, D. C.: National Institute of Education, Basic Skills Program on Teaching, 1975.

Merwin, Jack. Performance-Based Teacher Education. PBTE Series: No. 12. Washington, D. C.: American Association of Colleges for Teacher Education, 1973.

Nash, Robert J. and Russell M. Agne. "Competency in Teacher Education: A Prop for the Status Quo?" Journal of Teacher Education, Vol. 22 (Summer, 1971), 147-156.

National Education Association. The American Public School Teacher.
1965-1966. Research Report 1967-R4. Washington, D. C.: National
Education Association Research Division, 1967.

Neuhauser, Charlotte L. Management Information System. Competency-
Based Teacher Education Series: No. 4. Detroit, Michigan: Wayne
State University, Vocational and Applied Arts Education, 1974.

Norton, Robert and May Huang. Student Guide to Using Performance-Based
Teacher Education Materials. Columbus, Ohio: The Center for Voca-
tional Education, The Ohio State University, 1975.

Okey, James R. and Jerry L. Brown. Competencies for Performance-Based
Teacher Training. 1972. ERIC ED 080 457 (Microfiche)

Okey, James R., et.al. "Acquiring Teaching Competencies: Reports and
Studies." National Center for the Development of Training Materials
in Teacher Education. Bloomington, Indiana: Indiana University, n.d.

Polardy, J. Michael and James E. Eisele. "Competency-Based Education."
The Clearinghouse, May, 1972, pp. 545-548.

Panitz, Adolph. "Measuring Occupational Competency." School Shop,
Vol. 33 (September, 1973), 41-42.

Peterson, Roland L. "Competency-Based Vocational Teacher Education."
Paper presented at the Ohio State University, Columbus, Ohio, May,
1975.

Pierson, Michael J. Philosophical Base for Industrial Arts. San Marcos,
Texas: Texas Industrial Arts Curriculum Study, Southwest Texas
State, 1974.

Pitman, John C. Competency-Based Certification: What are the Key Issues?
NEPTE Working Paper No. 6. Durham, New Hampshire: New England
Center for Continuing Education, 1973.

Popovich, N. John. A Validation of Selected Teaching Competencies for
Industrial Teacher Education. 1974. ERIC ED 091 539 (Microfiche)

Quirk, Thomas J. "Performance Tests for Beginning Teachers: Why All
the Fuss?" Educational Technology, Vol. 13 (May, 1973), 14-16.

Quirk, Thomas. "Some Measurement Issues in Competency-Based Teacher
Education." Phi Delta Kappan, Vol. 55 (January, 1974), 316-319.

Ritchey, Rita C. Competency and Performance Objective Hierarchies.
Competency-Based Teacher Education Series: No. 5. Detroit, Michi-
gan: Vocational and Applied Art Education, 1974.

Ritchey, Rita C. Designing a CBTE Instructional System: A VAE Case
    History. Competency-Based Teacher Education Series: No. 3. De-
    troit, Michigan: Vocational and Applied Arts Education, Wayne
    State University, 1974.

Rose, Keith B., et.al. A Programmed Course for the Writing of Performance
    Objectives. Chino, California: California State University, 1972.

Rosenshine, Barak. "Curriculum and Other Contextual Variables." Paper
    presented at the Annual Meeting of the American Educational Research
    Association, Chicago, Illinois, April, 1974.

Rosenshine, B. and N. Furst. "Research on Teacher Performance Criteria."
    Research in Teacher Education: A Symposium, ed. B. O. Smith. Engle-
    wood Cliffs, New Jersey: Prentice Hall, 1971.

Rosner, Benjamin. The Power of Competency-Based Education. Washington,
    D. C.: National Center for Educational Research and Development,
    1972.

Rosner, Benjamin and Patricia Kay. "Will the Promise of C/PBTE Be Ful-
    filled?" Phi Delta Kappan, Vol. 55 (January, 1974), 290-295.

Roth, Robert A. Competency-Based Teacher Education and Certification
    Definitions: Synthesis and Schema. East Lansing, Michigan: Michi-
    gan State Department of Education, 1974.

Roberts, Roy W. Vocational and Practical Arts Education. New York:
    Harper and Row Publishers, 1965.

Ryan, Kevin. A Plan for a New Type of Professional Training for a New
    Type of Teaching Staff. Washington, D. C.: National Commission
    on Teacher Education and Professional Standards, 1968.

Schmieder, Allen. Competency-Based Education: The State of the Scene.
    PBTE Series: No. 9. Washington, D. C.: American Association of
    Colleges for Teacher Education, 1973.

Schmieder, Allen and Margaret McNelly. Competency-Based Education in
    Fields Other Than Teacher Education. Washington, D. C.: United
    States Office of Education Division of Educational Systems Develop-
    ment and the National Consortium of CBE Centers, 1975. (Draft)

Schmieder, Allen A., et.al. Competency-Based Education: A Briefing
    Package. Washington, D. C.: United States Office of Education,
    1975. (Draft)

Schochter, Gina. Competency-Based Teacher Education. New York: Queens
    College, New Careers Training Lab, 1974.

Scriven, Michael. Evaluating Program Effectiveness or If the Program is
    Competency-Based How Come Evaluation is Costing so Much? 1974.
    ERIC ED 093 866 (Microfiche)

Shepardson, Richard D. "A Survey (Utilizing the Delphi Method) to
    Assess and Objectively Display the Arguments for and Against Develop-
    ing a Performance-Based Teacher Education Program." The Journal
    of Teacher Education, Vol. 23 (Summer, 1972), 166-168.

Shugure, Michael F. Performance-Based Teacher Education and the Subject
    Matter Fields. New York, New York: Modern Language Association,
    1973.

Silvius, G. Harold and Ralph C. Bohn. Planning and Organizing Instruc-
    tion. Bloomington, Illinois: McKnight Publishers, 1975.

Smail, W. Quintillian on Education. New York: Teachers College Press,
    1938.

Smith, Othanel B., et.al. Teachers for the Real World. Washington,
    D. C.: American Association of Colleges for Teacher Education, 1969.

Task Force to Study Programs Leading to Certification for Teachers of
    Social Studies. Social Studies Teacher Competencies: The Affective
    Area, the Cognitive Area, the Community, School and Professional
    Relations Area. Minneapolis, Minnesota: Minnesota Department of
    Education, 1973.

Terry, David R., et.al. Competencies for Teachers: Vocational Education
    Shows the Way. Urbana, Illinois: University of Illinois, Bureau
    of Educational Research, 1972.

Vogler, Daniel E. "Utilizing Competencies in the Development of a Bac-
    calaureate Occupational Education Program," Journal of Industrial
    Teacher Education, Vol. 12 (Summer, 1975), 47-52.

Warmbrod, Robert. "Some Goals for Research in Teacher Education." Paper
    presented at the 28th Annual Meeting, Agricultural Education Re-
    search Report, Central Region, East Lansing, Michigan, Michigan
    State University, August, 1974.

Walsh, J. P. "Qualifications, Preparation and Competencies of Trade
    and Industrial Teachers," Unpublished doctoral dissertation, The
    George Washington University, 1958.

Wayne State University. Competencies and Performance Objectives.
    Competency-Based Teacher Education Series: No. 1. Detroit,
    Michigan: Wayne State University, Vocational and Applied Arts
    Education, 1972.

Wayne State University. Two VAE System Models. Competency-Based Teacher
    Education Series: No. 2. Detroit, Michigan: Wayne State University,
    Vocational and Applied Arts Education, 1972.

Weber, Wilford A. Competency-Based Teacher Education: An Overview.
    Syracuse, New York: Syracuse University, School of Education, 1970.

Weber, Wilford A., et.al. Guide to Competency-Based Teacher Education.
    Westfield, Texas: C-B Instructional Systems, 1973.

Weber, Wilford A., et.al. Competency-Based Teacher Education: A Sce-
    nario. PETE Series: No. 5. Washington, D. C.: American Associa-
    tion of Colleges for Teacher Education, 1972.

DELIVERING LEARNING/TEACHING

FOR COMPETENCY-BASED EDUCATION

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DELIVERING LEARNING/TEACHING
FOR COMPETENCY-BASED EDUCATION

INTRODUCTION

A cursory review of the previous papers indicated that "Competency-
Based Teacher Edu tion: A National Perspective," "Competency-Based
Programs and Materials for Vocational Teacher Education," and "Service
Area Focus on Competency-Based Teacher Education" have been addressed.
This particular paper and the paper which follows address the knowledges,
skills, and hopefully attitudes necessary for the development of compe-
tency-based teacher education materials.

This paper may best be described in terms of eight questions. The
questions are: (1) What are Vogler's CBE perspectives? (2) What is CBE?
(3) What are the products of CBE? (4) What are the functional components
of CBE? (5) What is learning/teaching? (6) What is the delivery strategy?
(7) What is the jargon? and, (8) What is the function of a module?

WHAT ARE VOGLER'S CBE PERSPECTIVES?

Most existing teacher education programs have evolved over time.
The teacher educator interests, textbooks, teacher certification re-
quirements, college degree requirements, inherited course syllabi, and a
multitude of other variables have contributed to this evolution. All
too often the variables have had little to do with the knowledge, skills,
and attitudes required by teachers. Thus, the teacher education curriculum
has often addressed teacher competencies through happenstance rather
than by design.

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One alternative to a happenstance curriculum is to utilize compe-
tencies in the development of professional teacher education programs.
In 1971, The University of Michigan embarked upon such a project to de-
velop a teacher education program utilizing competencies as a foundation.
The project was funded by the State of Michigan, Department of Education,
Division of Vocational-Technical Education Services. This developmental
project resulted in an operational, competency-based, upper-division,
comprehensive occupational teacher education program. Graduates of the
program exited with a Bachelor of Science degree in education; provisional,
general certification; and provisional, vocational certification, with·
each prepared to teach his or her vocational area.

A residual outcome of this project has been the development ·i a
personal perspective on competency-based education. The perspective can
best be indicated by the following five observations rel2·ed to competency-
based education.

1. Teacher education curriculum developers and implementors
    often expect too much from competencies, goal statements,
    and performance objectives. These components are communi-
    cation devices. To ι pect more from them than communication
    will lead to serious problems.

2. The delivery of learning experiences by modules has often
    been considered the singular system for providing the non-
    field based instruction.¹ Although a modular option is
    very desirable, it should only be an option. Other delivery
    systems, including traditional group instruction, may be
    more appropriate for a given situation. Further, adoption

of a modular competency-based delivery system would be
unrealistic at this time. The current materials available
to deliver a modular system are limited. Although materials
could be purchased, the materials would require revision
for specific situations. Finally, to expect that all stu-
dents learn best under a modular system would be as much
in error as to believe that all students learn best with
traditional systems.

3. Followers of CBTE often believe that the evaluation prob-
lems of teacher education will be solved with a competency-
based approach. The performance objectives with criteria
of reference provide an excellent means of communicating
the evaluation intentions. However, the mechanics of evalu-
ation for a large group of objectives and a large group
of students are huge. The problem is magnified when con-
sideration is given to other variables. Example variables
include assessing students upon entry, measuring durability
of competence, relating competence to teacher certification,
recycling current or returning students, evaluating field-
based competence, and determining psychomotor and affective
competence.

The emphasis in a competency-based program often shifts to
exit requirements. Although this is very appropriate and
consistent with the competency-based model, reality suggests
that attention must also be given to entrance requirements.
The expertise to accurately evaluate a prospective teacher

does not exist. Thus, the student ratio of entrance to
exit remains out of balance, and a tendency to permit
incompetence prevails.

5. Administrative decision makers often believe that a competency-
based program will reduce the number of teacher educators
while increasing the number of teachers prepared. Teacher
educator aides can relieve the teacher educator of certain
duties. Modules can replace scheduled classes. Cooperating
teachers can assume more responsibilities in teacher educa-
tion. However, the nucleus of a good teacher education
program is dependent upon low teacher/student ratios and
student access to the expert teacher educator.

WHAT IS CBE?

Competency-based education is equal to performance-based education.
Competency-based teacher education is equal to performance-based teacher
education and is one example of competency-based education. Competency-
based teacher education does not have sole rights on the whole competency-
based education movement. Competency-based teacher education is only
one example of the total movement. Hopefully, competency-based teacher
education can spawn teachers who will be competency-based in their opera-
tions. To put it differently, one should not be concerned with which
came first—the chicken or the egg. The important point is to have a
chicken capable of producing eggs. The remarks that follow should be
applicable to both CBE and CBTE.

A more direct and less circular double talk definition of competency-
based education might sound something like this: the organizational

structure of learning/teaching which permits description in advance of
the knowledges, skills, and attitudes that a student should possess
upon exit from a program or course.

WHAT ARE THE PRODUCTS OF CBE?

Historically, teachers have assumed the authority and the respon-
sibility for the learning/teaching environment. The result has been a
teacher-centered approach to education. Competency-based education can
produce four outcomes that would be more closely aligned to student-
centered education. The four CBE products are: (1) a shift of respon-
sibility from the teacher to the student, (2) a shift of emphasis from
learning process to learning outcome, (3) a clarification of instructional
intent, and (4) setting of the stage for evaluation. The interface and
importance of these four products will emerge through responses to the
remaining advance organization questions of this presentation.

WHAT ARE FUNCTIONAL COMPONENTS OF CBE?

The functional components of competency-based education may be
divided into two categories. The first category is an advanced organizer
or communication device. Goals, competencies, performance objectives,
and syllabi comprise the category. All four devices should be developed
in the planning stages of education.

The second category of functional components of competency-based
education is the delivery strategy system. This category includes learning/
teaching experiences and criterion-referenced testing. The category
equates to the implementation phase of education. CBE learning/teaching

experiences may emanate from group, individualized, and combination

strategies. The latter strategy may utilize both small groups and in-

dividualized instructional packages. The learning/teaching strategy

will be elaborated in a following section of this presentation.

Criterion-referenced testing is the ultimate CBE tool for it re-

quires that the performances of students be compared to standards speci-

fied in performance objectives. Upon completion of criterion-referenced

testing, the development/implementation loop is completed.

WHAT IS LEARNING/TEACHING?

Learning/teaching may best be described using the problem-solving

model. This model is comprised of five basic questions: Where am I

now? Where am I going? Why am I going? How am I going to get there?

How do I know when I'm there? The words "student" or "teacher" may be

substituted for the word "I." Thus, the model becomes: Where is the

student going now? Where is the student going? Why is the student going?

How is the student going to   there? How does the student know when

he is there? Likewise, the model may read: Where is the teacher now?

Where is the teacher going? Why is the teacher going? How is the teacher

going to get there? How does the teacher know when the teacher is there?

The substitution of the word "teacher" or "student" into the problem-

solving model makes it consistent with the products and the components

of CBE. To illustrate, the student problem-solving model provides for

the shift of responsibility to the student. The emphasis shifts to stu-

dent learning outcomes; and therefore, the instructional intent is

clarified. Finally, the notion of how does the student know when he
is there sets the stage for evaluation.

The teacher problem-solving model is consistent with CBE in that
the components of CBE require advance organizers. As noted earlier, the
CBE advanced organizers are goals, competencies, performance objectives,
and syllabi. The natural consequence is a problem-solving process which
is complementary to CBE.

WHAT IS THE DELIVERY STRATEGY?

Traditionally, learning/teaching has been provided in the group
setting. The teacher is the authority figure and usually is placed at
the front and center of the group. An alternative for teacher-centered
instruction is student-centered instruction. This can be facilitated by
self-contained learning/teaching tools called modules. Both strategies
have their advantages and disadvantages. Consequently, a third learning/
teaching strategy can evolve which is a combination system. The com-
bination strategy permits the use of either group techniques or individu-
alized techniques. Further, the combination strategy retains the large
group instructional option.

The tools for group, individualized, and combination strategies are
units, modules, and Mo-Uns. Group instruction usually is organized by
units which break into lesson plans. Individualized instruction is
usually organized into modules. The format and components will be ad-
dressed in the "Writing a CBE Module" presentation. The combination
instruction may be organized into a device, which for lack of a better word,
is called a Mo-Un. A Mo-Un utilizes the first two letters of module

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and the first two letters of _unit_, and in pra   e uses both lesson

plans and modules. Figure 1 illustrates the group, indivic al, and

combination delivery strategies. Figure 1 further identifies the learning/

teaching delivery tools.

GROUP ⟵ Unit   Module ⟶ INDIVIDUAL

```
        X                                                        0
      000                                        0        
      000                                 .0            0        0
      000                                       0    X
                                            0             C
```

```
              Mo-'n
                ↓
          COMBINATION

            X          0
          000     0
          000        C            X = Teacher
                                  0 = Student
              0
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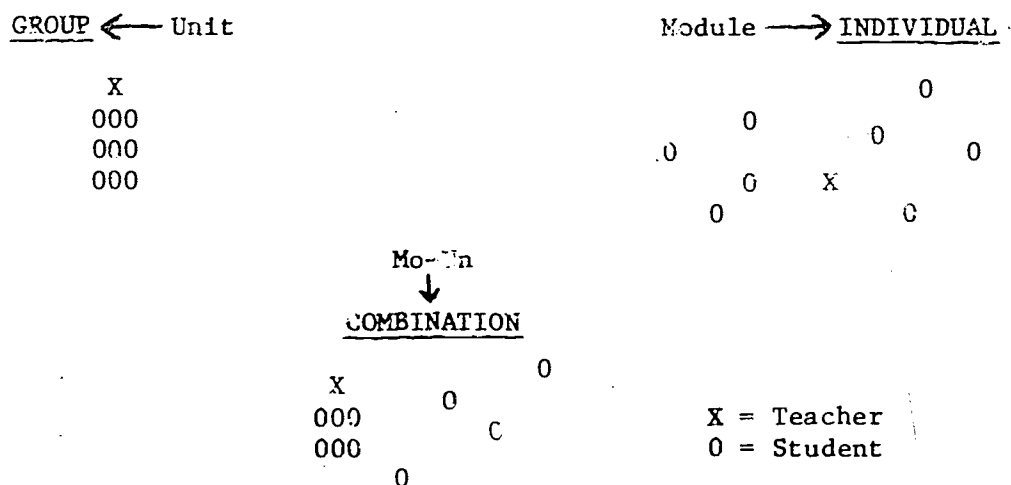
Figure 1. CBE Delivery Strategies

WHAT IS THE JARGON?

Professors keep their jobs by inventing new words for use with old

definitions. Several professors have been fully eu,loyed in the develop-

ment of CBE. They have brought in special definitions of modules, mc-uns,

goals, performance objectives, pre-assessment, post-assessment, criterion

of reference, criterion-reference testing, and many others. As one moves

through CBE materials, one will have questions regarding the definitions.

The safest approach is to use common sense and to accept the idea that

there appears to be no one right definition for any of the terms. There-

fore, you are given the license to be creative and to define and invent

your own new

WHAT IS THE FUNCTION OF A MODULE?

Modules may be defined as self-contained learning/teaching tools. The module may be used in the individualized or in the combination strategy. The module is the crucial element for individualized or combination strategy. Therefore, the importance of modules and the ability to write them becomes paramount.

The module functions are illustrated in Figure 2. One should note that the ultimate function of modules is flexibility for the presentation of instructional content.

SUMMARY

This paper has briefly addressed eight questions related to "Delivering Learning/Teaching for CBE." Scrutiny of the information permits one to deduce that CBE is consistent with contemporary learning/teaching theory and principles. CBE mandates a planning and execution scheme which is in harmony. Finally, CBE affords an opportunity for progressive change in education.
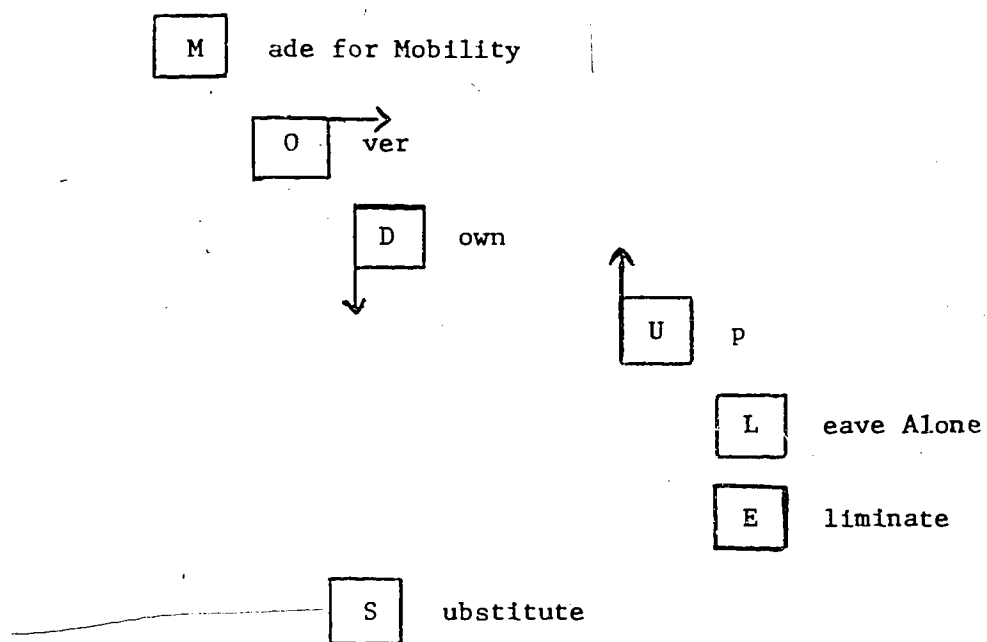
Figure 2. Module Functions

WRITING COMPETENCY-BASED EDUCATION MODULES

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WRITING COMPETENCY-BASED EDUCATION MODULES

Eight basic questions provide the background information for writing
CBE modules. They are: (1) What are the functional components of a
module? (2) What is the cover page function (3) What is the introduc-
tion function? (4) What is performance objective function? (5) What is
pre-assessment function? (6) What is learning experience function?
(7) What is post-assessment function? (8) What is the reference function?

WHAT ARE THE FUNCTIONAL COMPONENTS OF A MODULE?

There are an infinite variety of formats for modules; however, a
workable format must move the learner logically and sequentially through
a series of events that will enable the learner to meet specified per-
formance objective(s). An ultimate test of a module in terms of whether
or not it delivers is the problem-solving model. One may test any module
against whether or not the learner knows where he is now, where he is
going, why he is going, how he is going to get there, and does he know
when he has arrived. To accomplish this, the following skeletal format
for modules is offered:

<div align="center">

Cover Page
Introduction
Performance Objective
Pre-Assessment
Learning Experiences
Post-Assessment
References

</div>

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WHAT IS THE COVER PAGE FUNCTION?

In the final analysis, the cover page function must be able to com-
municate and to attract the attention of the learner. This may be accom-
plished if four basic components are included: title, content table,
prerequisites, and directions.

The title communicates active learning by adding an "ing" to the
performance element action verb. For instance, the performance element
"write a lesson plan" becomes the title "Writing a Lesson Plan." The
second option, to thrust the title into an action form, is to change the
performance element of the performance objective into a question. The
performance element "write a lesson plan" might well become "How Do You
Write a Lesson Plan?"

The second component of the module cover page should be a content
table. It will serve as an advance organizer for the total module. The
content table should include a listing of the format pagination. Thereby,
a reader could scan the content table and then turn to the specific
parts. The content table is particularly important for both the novice
who is picking up a module for the first time and for the experienced
module user who strives for learning efficiency.

The prerequisites component should also be identified on the cover
page. Prerequisites should communicate to the learner the knowledges,
skills, and attitudes necessary to enter the module. Basically, the
prerequisites should be kept to a minimum; and, "no prerequisites" is a
very distinct possibility. Prerequisites may be previous modules, a
previous course, or a variety of other previous experiences. The ultimate
prerequisite statement should enable the learner to decide whether he is

ready for the module. However, the module should also test the learner
for prerequisite competence.

The directions component should also be provided on the cover page.
The directions are learning routes for the learner. Directions are not
only needed on this page but should also be added at the end of each
section within the module. Well developed module directions will weave
the student efficiently toward competence.

WHAT IS THE INTRODUCTION FUNCTION?

The introduction to a module will usually follow the cover page
and serves one primary purpose--to address the problem-solving model
question, "Why is it important?" The "why" answer must be evident to
the learner upon completion of the introduction. "Why" answers create
interest, establish basic assumptions, and encourage the learner to set
goals.

The introduction can accomplish interest creation if it arouses
curiosity; is brief, clever, or stimulating; uses visuals, provides ex-
pectation of meaningfulness, looks like fun; or creates competition.
These characteristics can also be used as a checklist for whether or not
interest has been created and if "why" questions have been answered.

WHAT IS THE PERFORMANCE OBJECTIVE FUNCTION?

Performance objective must provide the pivot point for the entire
module. Like all performance objectives, the module performance objec-
tives must specify the learner outcomes, identify the conditions under
which the performance should occur, and establish assessment standards.

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The performance objectives used within a module may be terminal and/or enabling. It is essential that a terminal performance objective be identified. The terminal performance objective should receive a prominent place following the introduction. Enabling performance objectives may be provided as a process device and usually are clustered in groups of two or more. If the enabling objectives are accomplished, then the terminal performance objective will be accomplished. By indenting, one may locate enabling performance objectives on the same page with the terminal objectives. Enabling performance objectives are often placed as the headings for learning experience sections.

WHAT IS PRE-ASSESSMENT FUNCTION?

The pre-assessment function is provided in modules for two basic reasons. First, it provides the prerequisite test option. To illustrate, if a module has a prerequisite, then the prerequisite must be tested. The prerequisite may be tested by paper-and-pencil tests or any other means which provide evidence that one has met the module entrance requirements.

The second reason for a pre-assessment is to permit skipping part or all of the module. This pre-assessment option allows the student to move in jumps or skips throughout the module. The jump or the skip will be based upon demonstrated competence. This option is often called exemption testing. A convenient and efficient means of pre-assessment for the total skip option is to utilize the post-assessment as the pre-assessment.

The pre-assessment function also provides some opportunities for the learner. It helps the learner make decisions, allows the learner to self-pace, and serves as a learner diagnostic tool. The pre-assessment may also interface with the introduction by arousing curiosity. Finally, one should not be concerned about overusing pre-assessments. Pre-assessments are probably the most natural, non-threatening, learning device available.

WHAT IS THE LEARNING EXPERIENCE FUNCTION?

The learning experiences provide the meat of the module. Learning experiences permit the learner to accomplish the performance objectives. The learning experiences section divide and sequence the learning activities. Learning experiences cannot be undersold as a component of the module. All other module parts merely lead to or assess benefits of learning experiences.

The learning experience section should provide variety. It may be self-contained and should appeal to several senses, not just learning through reading. The section must include assessment, and may require supplemental information sheets. It should be domain consistent. In other words, the learning experience in a cognitive area should relate to a cognitive performance objective.

The learning experiences may include both crucial and enrichment learning experiences. However, all learning experiences should be action oriented. If these options can be provided within the learning experience section, the section will be a success.

WHAT IS THE POST-ASSESSMENT FUNCTION?

The post-assessment must test exit competence and facilitate criteria-referencing. It may deliver a comp-out option and may diagnose competency voids. Ideally, the post-assessment will close the learning/teaching loop.

The post-assessment function may be simplified if several procedural points are followed. First, sampling may be used for testing knowledges, skills, and attitudes. Secondly, post-assessment need not go beyond the levels of the performance objective; and thirdly, it is essential that one test enough performances and collect enough data to be satisfied that competence has been achieved.

WHAT IS THE REFERENCE FUNCTION?

The reference function exists as a finalizing effort within the module. It should give credit for any materials, works, or ideas utilized within the module. The reference section should identify special resources needed to satisfactorily complete the module. It provides a listing of resources that would help facilitate the module facilitator in preparing for execution of the module. Finally, the reference section should prevent copywrite suits and keep one out of jail.

SUMMARY

The functional components of a module have been presented. Writing a module can be a rather simple task when the information provided earlier is mastered. However, the parts of a module should not be written in the

same order as they are presented in the module. Figure 1 lists the final

format and the developmental order for a CBE module. Basic content

checks are included. One should bear in mind that this is just one for-

mat. There are infinite variations.

Figure 2 provides a critique system for modules. Note that the

system incorporates the problem-solving model.

FINAL FORMAT	DEVELOPMENTAL ORDER
Cover Page	—
title	7
content table	10
prerequisites	2
directions for module	9
Introduction	4
answer "why"	—
PERFORMANCE OBJECTIVE – TERMINAL	1
optional enabling P.O.(s)	
Pre-Assessment	—
test prerequisites	3
allow learner to skip	6
Learning Experiences	5
module meat	—
develop learner	—
POST-ASSESSMENT	6
test exit	—
criterion-referenced	—
REFERENCES	8
credits	—
unusual resources	—

Figure 1. Format and Development of CBE Modules

HINT: Take at least seven sheets of paper and label each
sheet with one of the above headings. Do what is required
for each heading in the order listed under the DEVELOPMENTAL
ORDER. When you have completed the first eight steps, shift
your papers into the FINAL FORMAT and then write your di-
rections and content table. Naturally, the number of module
pages will vary. You will, no doubt, desire to revise after
this point. Good luck!

DOES THE LEARNER KNOW WHERE HE IS?

	Yes=2	Maybe=1	No=0

DOES THE LEARNER KNOW WHERE HE IS?

1. Title communicates . . . .
2. Prerequisites clearly stated . . . .
3. Testing options defined . . . .

DOES THE LEARNER KNOW WHERE HE IS GOING?

1. Development of knowledge, skill, or attitude
   evident in title . . . .
2. Directions to next section evident at end of
   each section . . . .
3. Development of knowledge, skill, or attitude
   evident in performance objective . . . . . .

DOES THE LEARNER KNOW WHY HE IS GOING?

1. Goal seeking is promoted . . . .
2. Interest is aroused in introduction. . . . .
3. Each module section related to other sections

DOES THE LEARNER KNOW HOW HE IS GOING TO GET THERE?

1. Conditions for performance evident in per-
   formance objective . . . .
2. Sufficient number of learning activities to
   deliver on performance objective . . . . . .
3. Learning activities are appropriate . . . .

DOES THE LEARNER KNOW WHEN HE IS THERE?

1. Measurement of performance facilitated . . .
2. Pre- and post-tests available when required.
3. Tests are criterion-referenced . . . .

COLUMN TOTALS

COMPOSITE CRITIQUE SCORE _____

MODULE RATING

____28-30 Ready for tryout   ____16-22 Major revision needed ____0-7 For-
____23-37 Minor revision needed   ____8-15 Parts may be useful   get this
                                                                     one

Figure 2. CBE Module Critique

CONCERNS IN THE IMPLEMENTATION OF

COMPETENCY-BASED TEACHER EDUCATION

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CONCERNS IN THE IMPLEMENTATION OF
COMPETENCY-BASED TEACHER EDUCATION

When first introduced   ,ased teacher education (CBTE)

one might state: "That s(...e idea, but how can I ever '

it into effect in my own institution." It is difficult to implement un-

less adequate resources are provided. Persons working with programs in

brand new institutions may find the implementation process to be easier

than to change a program already in existence. The time seems right for

implementation of CBTE, however, as impetus for change is coming from

many directions. The major concerns for implementation are: (1) pro-

gram development, (2) flexibility of time, (3) standards and progress

reporting, (4) materials, equipment, and facilities, and (5) staffing.

These concerns will be discussed in the paragraphs which follow.

PROGRAM DEVELOPMENT

Two major routes may be taken in program development. The first

route involves developing the entire CBTE program before beginning to

use it, while the second route is to move gradually into using the CBTE

program as it is developed. There are advantages and disadvantages asso-

ciated with each route.

The major advantage of developing the entire program first is that it

is a more orderly procedure. Materials are ready for students and stu-

dents know what to expect since objectives and requirements are neatly

laid out. Major disadvantages are: (1) it is difficult to obtain suf-

ficient feedback during development concerning how procedures will work,

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(2) staff members are often teaching the old program while developing the

new, and (3) waiting until the whole program is completely developed may

mean that it is never completed.

If a decision is made to take ' ' secc ' route and implement the

program as it is developed, it is very impoi ant that competencies be

clearly defined in the beginning. Otherwise, a faculty may find it very

easy to arrive at an unexpected destination.

It is possible to begin teaching a course for which competencies are

defined and then develop performance objectives for each new set or cluster

of competencies as one progresses; it is much easier for everyone, however,

if the objectives are also written before the course begins. The sec-

ond route was used in converting a methods class to CBTE. The procedures

are explained below:

First Semester

    A. Identify competencies
    B. Develop performance objectives
    C. Develop criterion tests
    D. Continue group instruction
    E. Continue norm-referenced grading

Second Semester

    A. Refine objectives and criterion tests
    B. Provide self-tests for students
    C. Develop retests as needed
    D. Switch to criterion-referenced grading
    E. Provide as much remedial work as possible

Third Semester

    A. Determine how content should be divided into modules
    B. Develop some self-instructional modules
    C. Fill in the gaps with group instruction

Fourth Semester

    A. Provide a list of self-instructional modules and objectives at beginning of semester

    B. Complete self-instructional modules as needed by students

Fifth Semester

    A. Revise su   ed time frame

    B. Refine   nd procedures

The time requi   ke this transition to CBTE using the second route will obviously depend on prior experience of the program developer and the amount of time available. The procedure described is not suggested as a model to follow but simply as a possible plan. The steps are not as discrete from one semester to the next as the outline may suggest.

Advantages in using the second route include: (a) instructor receives more immediate feedback on progress, (b) added impetus to keep developing the program once materials are promised to students, (c) students can begin reaping the benefits from some of the changes sooner, and (d) students do not have to make sudden changes--there seems to be a remarkable grapevine concerning what to expect in a particular course.

Disadvantages are that (a) deficiencies at certain stages are more apparent to both students and instructors, (b) time pressures may mean that materials are sometimes quite rough, and (c) students may feel somewhat in limbo as changes are occurring.

If released time can be provided it is recommended that the entire program be developed before implementation. This route may also be feasible if there is a group effort. In the absence of the above two conditions, choose the second alternative, simultaneous development and

implementation. It is recommended that a realistic time schedule be planned for the development and implementation of the CBTE program.

FLEXIBILITY OF TIME

The second major concern is time flexibility. Although one of the major ten...'   is that learners can p. .ress at their own rate, most ar....d in...o a fixed time frame which assumes that all learners progress at the same rate. Even when instructors manage to achieve time flexibility within a particular course, a fixed time frame within a course may still exist.

All institutions may not find the same solution to the problem. It is recommended that an individual examine the regulations in the ins'i-tution within which they plan to implement CBTE   safety valves to use in order to provide flex bility.

TIME FLEXIBILITY ACROSS CC ;ES

In an attempt to provide time flexibility sc   institutions have awarded variable credit at the end of the semester depending on amount of work completed. Marshall University had such a proposal reviewed several years ao that received considerable support. The plan was not approved, but more flexibility has been accomplished.

Another method of providing flexibility may be accomplished by letting students withdraw without penalty from a course just prior to semester exams. Students may pick up where they left off when they re-enroll if they have completed a sizeable portion of the work successfully.

There has been a very low withdrawal rate from classes when using the CBTE approach at Marshall University. Time pressures toward the end of the semester have sometimes been severe for certain students, but most finish. One or two students may withdraw during the first three weeks, but these same students often withdraw from school before the semester is over.

A second safety valve may be provided by giving incompletes. At Marshall University this safety valve opens easier at the graduate level than at the undergraduate level. Another safety valve that is already available on most campuses is to advise students who work more slowly to carry a lighter course load. One student may carry 21 semester hours and another only 9 or 10. Both students could be meeting requirements.

Examine the system to see what loopholes may be found in providing for time flexibility. When it has been proven that the CBTE system works, college and university policies may be changed to permit legitimate flexibility.

TIME FLEXIBILITY WITHIN COURSES

Theoretically, students should be able to work through course objectives completely at their own rate. Practically, guidelines must be set in view of an arbitrary completion date. The suggested completion time for modules may be changed each semester depending upon time required by previous students in the program. One class may set the pace by completing the first two-thirds of the modules ahead of a suggested schedule. The severe end-of-semester pressures may be avoided by an early completion.

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Criterion tests may be rescheduled if students request it. Students may ask for tests earlier, sometimes later, depending on other time demands. In the home economics program at Marshall University, students do not take the criterion test with the remainder of the class if they are completely unprepared. There is considerable latitude as to when students must complete a particular test with an acceptable score. About halfway through the course, students complete all work up to a certain point. This procedure accomplishes two things: it helps students pace their work and makes the job of teacher possible. By mid-term, the teacher may pull retests for about 15 or 20 different criterion tests. It is difficult to deal with that many retests at one time with the amount of time and help teacher educators usually have available.

CBTE permits flexible use of class time rather than requiring it once the evaluation system is dealt with. Even though a class is scheduled three hours a week, it may not always meet. Part of the time may be used for individual conferences; some days may be used for criterion tests; some for retests; and some for special help. Occasionally, filmstrips or slides could be shown during class time;but students are not penalized if they prefer to see them at another time or if they choose a reading instead. A class discussion may be scheduled on topics as students indicate the need.

STANDARDS AND PROGRESS REPORTING

The third major concern is grading and progress reporting. Teachers will find themselves in a dilemma as most are required to report letter grades. Some institutions have initiated a policy permitting students

to take a certain number of credits on a pass/fail basis for about five
years and, more recently, students have been allowed to take a few courses
outside of their major field on this basis. Reactions are mixed and a
return may be made to giving letter grades for student teaching. Super-
vising teachers other than those in home economics have indicated that
student teachers don't work as hard. Studies from other institutions
have indicated that achievement is lower with pass/fail. A CBTE type of
program stimulates more effort among students whether or not letter grades
are given. No data supports this claim, but informal observation over
a several year period influences the author's belief. The microteaching
program was an experiment begun in the fall of 1969. It was so successful
that the efforts were expanded in that direction. Until last year, stu-
dents received no letter grade as the experience was simply listed as
a requirement for other courses. Students came to their microteaching
session even when they missed all other classes the same day. The con-
stant feedback students received really made final letter grades unneces-
sary. The experience was attached to other classes. Actually, one year
a microteaching experience was operated for 24 clock hours that wasn't
attached to anything. Students simply had to meet the requirement.
Students who were enrolled in an Educational Foundations class substituted
this experience for a live observation in the public schools. When EDF
dropped the laboratory requirement, our students completed the experience
even though they received neither grades nor credit. Two one-hour courses
were later added to our program which included microteaching.

Advocates of letter grades maintain that grades stimulate effort.
This use of grades may teach students to work for the external reward. It

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is preferable for students to find satisfaction in working to meet speci-

fied standards and eventually set their own standards of performance. A

couple of years ago when supervising teachers sent mid-term progress re-

ports for student teachers, one teacher responded to the question concerning

weaknesses by saying that the student te ·'·er   ᵕ hard. That

is the kind of weakness one likes to hear about.

Abolishing letter grades would make very little difference in student

effort and achievement. Many of the achievement comparisons have been

made in either elective cr general education courses with passing meaning

a D or better. If all a student has to do is pass with a D, he/she isn't

likely to exert much effort. Making a D isn't good enough in a major

subject or in professional education. Students must maintain a C average

in general education, in professional education and in their major.

This policy is better than just an overall C average, but making a B in

an Educational Foundations class and a D in Methods does not guarantee

success in teaching. A CBTE program permits the maintenance of standards

for each course and each competency.

Grades are not necessary, but if necessary can be awarded. In evolving

a system for awarding grades with CBTE, there are several changes in

thinking that must be made. The first change is to forget about the nor-

mal curve. The second concerns letting superior achievement on one compe-

tency average out with marginal achievement on another competency.

Another change is to stop considering the score on a particular criterion

evaluation as final.

One educator has justified abolishing the concept of the normal curve

on the basis that the normal curve occurs by chance. Since education is

supposed to be _intentional_ rather than a chance occurrence, why should

we expect a normal distribution of grades? The range grades that occu

are likely to reflect the standard set. Thus if 7.   cent

for objectives are set, some D grades may be expected. If 85 per cent

standards are set, only A and B grades will be made if all students meet

requirements. Students _will_ meet whatever expectations are set forth in

objectives if a system is devised whereby the first effort to master a

competency is not necessarily the last opportunity.

There are two basic ways to differentiate among letter grades with

CBTE programs. First, vary the standard of achievement required. Second,

vary the number of competencies. For undergraduate courses, the first

pattern may be used. Adding additional competencies for an A does not

seem feasible considering the extent of basic requirements. For graduate

courses, the second pattern is frequently used with varying requirements,

or a combination of varying requirements and varying standards. Contracts

work quite well with graduate students. Students may contract for grades

on the basis of both scores and number of modules completed. Stipulations

may be built in relating to pretest scores so that students can test out

of modules. If students choose to complete a module that they tested

out of at a B level, they are required to improve the posttest score.

Different patterns were used for contracts last summer with two

graduate level workshops. In one workshop, teachers developed learning

packages for home management. In order to make a B each teacher developed

a specified number of packages of an acceptable quality. For an A,

teachers developed a few more packages but they also had to demonstrate

competencies relating to reviewing and revising packages. Behaviors had

to demonstrate   it on to the overal   is of ie pi iect.   In

short, teachers earnin at   were required to demonstrate certain leader-

ship competencies.   In the other workshop, Innovative Teaching Techniques,

both the quantity and quality of work varied for different letter grades.

For example, participants contracting for an A developed both a simulation

and a game, whereas, those contracting for a B developed one or the other.

Participants contracting for an A had to achieve higher test scores and

also formed review teams to check all products developed.   Feedback is

used in revising teaching materials.

Although more time is spent with evaluation in a CBTE program, the

end of semester trauma is lessened.   Participants have either met the

standards for an A or they haven't,and there is no mystery involved as

to what the requirements are.   When contracts are used, students who see

that meeting standards for an A is unrealistic are likely to change their

contracts voluntarily.

MATERIALS, EQUIPMENT, AND FACILITIES

The main points to consider in relation to A-V equipment for CBTE

are: (a) choose equipment that is easy to use; (b) have equipment readily

accessible to students; (c) single-purpose rather than dual-purpose equip-

ment permits more students to work at one time; (d) the smaller size in

A-V equipment is a space saver; and (e) earphones reduce the noise level.

An additional point is that early mastery of competencies relating to

use of A-V equipment is essential if participants are to be able to use

the equipment for self-instruction.

Materials for CBTE present a two-pronged problem. Finding suitable resource material is difficult as traditional textbooks seldom meet the demand. The second part of the problem is making the material available to students. It may be found that existing materials either provide only a superficial coverage of topics or they assume prior knowledge the beginner does not have. Thus, it is often necessary to write self-instructional modules and then write the missing supporting material. Even when good material is available on a topic it is likely to come from a dozen different sources including books, brochures, pamphlets, journals, conference reports, and curriculum guides. Non-profit media is not available on many topics. Since many of the resources are not of the type that can be neatly cataloged and placed on a library shelf, labeled boxes will help keep material in some semblance of order and enable participants to find what they need. Color coding and other symbolic coding (usually coinciding with the code for modules) also helps. As a long range solution it may be necessary to write texts specifically designed to accompany modules in order to reduce the sheer volume of resources that are required. Students also seem to like self-contained modules which have the supporting material included.

STAFFING

We all remember the furor several years ago when educators feared that teaching machines would replace teachers. Not much is heard about that concern any more—instructors are busier than ever as they move into CBTE. For one thing, the minute the challenge is accepted that all participants will achieve a pre-specified level of mastery, the teacher is

busier than ever. In another five years the work will ease off; the
system will be operating smoothly and the materials will be developed.
A major aspect of the CBTE system is the feedback loop. How is the sys-
tem working? Have conditions changed which require new competencies?
What other improvements are needed?

Most of the individuals who decide to develop or continue a CBTE
program will probably spend a major part of their time in program develop-
ment. The amount of time devoted will depend largely on the amount of
assistance received from other persons during implementation. It may be
necessary to delegate implementation of some favorite activity to other
persons if time is found for program development.

An assistant may assume the responsibility for administering criterion
tests, grading, and recording scores. The responsibility for test develop-
ment and for checking work that cannot be scored by an inflexible key
must also be assumed by someone. Assistants can help with assembling,
distributing, and filing materials. Training assistants is a never-
ending process as many are temporary staff. Furthermore, the tasks to
be done change from year to year during program development.

It has been said that the true success of an innovation can be judged
only by the success persons other than the original developer have in
implementing it. Innovative programs have been known to collapse when
the developer moved on. CBTE is a rather grandiose scheme which ties
together a number of educational innovations.

It often seems easier to develop a program and then find persons to
help implement it. Broader involvement in the original development will
help insure that the program is carried out as intended. As new personnel

join the staff, it is very important to help them understand the overall philosophy of the program as well as specified procedures. This broader understanding often influences how faithfully day-to-day procedures are carried out and the kind of adjustments that are made.

Educators have stopped talking about teacher-proof curriculum and concede there is probably no such thing. At first glance, CBTE might appear to be teacher-proof. It isn't—a million things can go wrong. For instance, an instructor may start awarding grades on the basis of the number of activities performed rather than on achievement. This misses the whole spirit of CBTE. Or consider the matter of pre- and posttesting. Several years ago, someone on our campus developed a module for all secondary education students on the teaching of reading. It seemed to be a great idea, but my students reported that assistants gave the pretest and then showed students what they missed. Since the pre- and posttest were the same, most students went ahead to the posttest with no further study and simply tried another answer for questions they had missed. Obviously, this procedure also missed the point of CBTE as criterion tests usually measure only a sample of the desired behavior. Students learned more about psyching out a test than they did about teaching reading. Our students admitted that they recognized that they missed important learning, but took the easy way out because the system allowed it and there were more pressing demands on their time.

Having another educator attempt to use the material developed does help us pinpoint weaknesses in modules. These weak spots can also be pinpointed if analyzed at points where students require further clari-

fication. As long as we are the only ones using the material, failure

to recognize further clarification provided and needed may be overlooked.

Actually, students are the best evaluators of CBTE materials. One

problem encountered when having students evaluate the materials is that

of getting more data than can be analyzed. Unless assistance in analyzing

feedback is provided, a limitation may be made on the number of students

providing feedback for each module.

As instruction is individualized, greater and greater demands are

made on time. There are certain procedures that can be introduced to

share the load and make more efficient use of time. Consider the matter

of retests. It is time consuming to permit students to take retests in-

dividually. With limited time available, set aside certain times when

students can take whatever retests are needed. Students from other classes

may also attend at these times. More times for retesting are needed but

time pressures prohibit this expansion. One solution would be to make

a weekly schedule for retests and make-up work from all classes in the

department or division. Each staff member could monitor tests from any

class during a specified time period.

SUMMARY

Only a brief discussion has been provided of the many problems as-

sociated with implementing CBTE programs. The particular problems faced

and the solutions found will differ within each institution. No final

answers are given. The program at Marshall University is still groping

for answers. Some days the problems seem insurmountable. However, when

a comparison is made with the program as it was before CBTE, the effort

seems very much worthwhile..

TOWARD A FRAMEWORK FOR IMPLEMENTING

COMPETENCY-BASED TEACHER EDUCATION

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TOWARD A FRAMEWORK FOR IMPLEMENTING
COMPETENCY-BASED TEACHER EDUCATION

OVERVIEW

The preceding papers have dealt with competency-based teacher educa-
tion (CBTE) from a mos positive point of view. Houston perceives CBTE
as having the potential to affect major changes in the field of teacher
education. Hamilton and Fairdig provide evidence that there is a great
deal of support for CBTE as a relevant movement. Discussions by both
Vogler and Blankenship reveal that CBTE _can_ be implemented in a univer-
sity setting and that it _does_ actually work.

Of course, there is not complete agreement by all teacher educators
as to the worth of CBTE. A number of persons have raised serious ques-
tions about the nature of CBTE and its ultimate value as a movement.
Merrow (1975) points out that CBTE has serious shortcomings in the areas
of administration, politics, philosophy, and cost. Nash (1973) has made
a strong plea for CBTE to be more humanistic in nature. Merrow and
Nash are perhaps representative of those who do not fully support the
CBTE movement or who seriously question its basic precepts. These few
statements, hopefully, will serve as a cautionary note to anyone who is
contemplating the establishment of a CBTE program. While CBTE has gar-
nered much support at national, state, and local levels, it is certainly
not all things to all people and must be dealt with in a corresponding
manner.

The discussion which follows is based upon the premise that imple-
menting CBTE does not differ markedly from making any curricular change.
While it is easy to recognize that CBTE has certain peculiarities, the

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business f implementing any new curriculum ra: ses several fundamenta'

conce :s This paper 'tt---- · deal irectl- :t :hese concerns an.

: :c: :: · :hem into :: : :l fra: work f: :: _:mentir:: CBTE. In:-

t :l t:: ::er education c: : :lum developmen: :: d:scussed. This is

f : b the identi:icati : of vocational tea : education progr:am

types p: ..ntial implementation constraints, an: :lementa::ion opt:ons.

Fina: : framework : s pro: sed which :akes in:: :count :ne:e program

types, :straints, ar d opt :s.

CURRICULUM DEVELOPMENT IN TEACHER EDUCATION

Although the curriculum renewal process is quite often associated

with sec:ndary and post-secondary vocational education, it seems to be-

come a less frequent occurrence as far as vocational teacher education is

concerned. By their very nature, teacher education programs are often

constrained by a number of forces such as college course structure,

certification requirements, and credit hours. The result has been main-

tenance of rather traditional teacher education curricula which have

not always focused on meeting graduates' professional needs. While

vocational education curricula have undergone numerous revisions and modi-

fications so that graduates would be better able to survive in the world

of work, many teacher education curricula have not been equally respon-

sive to the needs of their graduates. There is certainly nothing wrong

with tradition per se, but it is important that teacher educators examine

today's and tomorrow's needs and determine just what sort of curriculum

renewal should take place. As Swanson (1974) points out,

> it may be necessary to create entirely new norms or forms of
> teacher preparation, including the creation of entirely new

ty   ' ins : tions., to insure that   tional teacher prepi-
ra   'l : operate at t e margin   :echnical competency.

Th.   .:b:: ess of teacher education urriculum develop...nt

should not be thr.   of as a simple task whi.   can be accompl..ned in

a few days   Rat : it constitutes a major un .ertaking and repre:ents a

strong com..'   ' .. the part of professionals and students at all levels.

Teacher ed .   -- ... riculum development may   a represented by f ir

stages: t.   .: .: .e, the design stage, the development stage ind the

implementa: . .. (Cruickshank, 1971). As Cruickshank indicates:

> During the   .. stage, the training agency organizes for change
> and es. .li .. needs and priorities in teacher education cur-
> riculu: t = .esign stage includes efforts to identify program-
> matic t .v ... that hypothetically will reduce or eliminate the
> needs: .he development stage, the training agency seeks to
> build c .d::: new training components and support subsystems;
> during .. i..lementation stage, the new components and sub-
> systems ..re :ried out.

This pr..:ss with its four stages has several important implications

for teacher ac..arion in general and CBTE in particular. First, taken

together, the .:. . ;ges re::resent a systematic approach to curriculum

development.   ..   often, change is made merely for the sake .: change.

The four sta.:s p: . ;s assists in overcoming this sort of difficulty by

first identi :in;; what needs actually exist and then proceeding to reduce

or eliminate these needs.

A second im .:.:atibn may be drawn from the long-range commitment to

change. If the .evelopmental process is to have any lasting value,

persons involved ..n this effort must look at programmatic change rather

than merely .emoting to find some immediate solution to a complex

problem. Ii f example, there is a need.to develop a vocational teacher

education curr..ulum which will prepare teachers of handicapped students,

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plan: should be made .o deal with both the proce::   preparing teachers

and :he impact of newly prepared teachers on the.. :t(ients. ̃hile it

is recognized that a long-range commitment to cur⁻ :cul im deve_opment

and :tudy is most difficult to make, the rewards : .: :han offset this

extra effort.

A third implication derived from this process :. :oncern for trying

out components of the new program and thus insuri:: .:t they do make a

difference. While it is easy to speculate that stuc.n::s will learn and

enjoy their learning, there is no substitute for s:⁻. :atic examination

of program operation. The result of such an examination will be useful

feedback about the program which may ultimately lead to program refine-

ment.

VOCATIONAL TEACHER EDUCATION PROGRAMS

Within the broad context of teacher education curriculum development,

there always exists the specific concern for one's own particular situ-

ation. The general and abstract must eventually become specific and

concrete if change is ever to take place. Consequently, :: becomes im-

portant :.. identify the exact kinds of vocational teach: education pro-

grams which might lend themselves to CBTE implementati.:.. While, at

first glance, it may appear that vocational teacher educ.::ior is restricted

to teacher education institutions, this is far from the ::uth.. Teacher

education institutions do make a substantial contributi:.. to :he prepa-

ration and upgrading of vocational teachers; however, t:.e:e :r: others

who may also perform these tasks. In recent years, many :oc:: education

agencies have taken on a greater responsibility for secondary vocational

teachers in-service edu .on. Post-secondary institu   .m (community
colleges and technical i: :titute: e also been movin   .. the direction
: providing their own in- rvic :ea:her education. . . it may be
seen   .: both teacher education institutions and empl ye:: :ave the
responsibility for educating vocational teachers with employers placing
a greater emphasis on in-service work.

 he different ways in vocational teacher education ay be arranged
a so have importance to CBTE. Some teacher education programs are set
up by vocational service area while others are offered n an across-the-
board or comprehensive basis. In a number of·instances   core or
common offerings are provided to all students with the remainder of
course work in each student's teacher education program taken through a
specific area. Although the foregoing is common knowledge to many, it,
has been brought up to point out the range of possible ways that CBTE
might be offered. The fact that pre- and in-service vocational teacher
education might be offered by a number of different institutions and
agencies on an across-the-board basis or by service area points up the
need to account for this variation during the CBTE implementation process.

POTENTIAL IMPLEMENTATION CONSTRAINTS[1]

While the actual type of vocational teacher education program may
in itself, be a deterrent to CBTE implementation, there are other poten-
tial difficulties which can arise when CBTE is being installed. These

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[1]For a more detailed discussion about implementation constraints see
Finch, Curtis R. and James B. Hamilton, "Performance-Based Teacher Educa-
tion Curricula: Implications for Programs," in (Anna Gorman, ed.) The
Changing Educational Scene. Columbus: The Ohio State University, Center
For Vocational Education, 1974.

s   ... ...ad to a grea r .. lesser degree by p: gram type but are also
. .d ... e.y to the teac.er ..cation setting. .ive potential constraints
.. .. show up durin. ... .BTE imp.ementation process include: iden-
t...... . of competenc... .astructi.nal materials; roles of faculty
a.   ...ts; interacti.n   .h var.ous groups, institutions, and agencies;
i..... ..nal support; an. c.sts (Finch and Hamilton, 1975).

I. nt.. ..tion .. Com. ..te. ..s

When a competency-base. teacher education. program is being developed
or .lans ar. being formulat.. for an ex.sting progra. to move in this
direct.on. a p.imary concern is with the identification of competencie..
Sir.e tea.he. competencies s.rve as a foundati .. for .BTE, errors at thi.s
po.... m. .ecul. i. the es..blishment of a program th.t lacks validity.
.. of the ma.. .. criticism. leveled at some CBTE programs is that they
...rely ' .each .he same '.nd perhaps irrelevant) cont.nt with a new and .
.mproved fram...ork (. ...ra, 1973)." .he key iss.. then seems to be that
.. ide...ifyin. .om. .... .. which actu.lly maxim... .ne probability of
.ea...ng suc.es.. .. .... associated with this iss.. is the establish-
.... . p.io.. .es .. .ompeten.ies. .iven a comprehensive listing of
.... competen..e. .. c.. .ea.her educators select .ose which are most
....a. t. .ne ....t .assuming that institution.. or agency con-
......s .o .c. pe... . al. t. be taught)?

I..ructional Materials

As an institution .r ag.ency moves forward.with the business of im-
plementing CBTE, .. immedia.e need is felt to obtain and/or develop

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instructional materials. These generally take the form of modules
(learning packages) and supporting mediation (e.g., videotapes, films,
reference materials). Although there is general agreement among those
in CBTE as to what constitutes a module's component parts, several ques-
tions may be raised about what it should actually do. For example,
does the module "deliver" on a certain important teacher competency or
set of competencies? Is it functional and useable? Does it change teacher
behavior? What are the effects of modularization on a grand scale?
These as well as others are legitimate questions which may be raised
about instructional materials that are typically used in a CBTE program.

Roles of Faculty and Students

The roles of faculty and students will most certainly change when
a CBTE program is implemented. Or, put another way, if faculty and stu-
dent roles are not revised the program is probably doomed to failure.
One may wrongly assume that change is a relatively simple task. In fact,
people (particularly faculty members) may not be receptive to the idea
of being involved in another new approach to teacher preparation. Fac-
ulty may be threatened by the thought of losing a little personal autonomy
while students might not relish interacting with instructional packages.
Indeed, all who will be associated with a CBTE program can raise meaning-
ful questions about their respective roles.

Interacting With Various Groups, Institutions, and Agencies

Closely aligned with the CBTE movement is the idea of increased in-
teraction with various groups, institutions, and agencies. For example,

competency-based certification being implemented in many states is serving to better align teacher education programs and certification requirements. Much collaborative work will surely need to be done before programs and certification are in alignment. Interaction with local education agencies will, likewise, be increased. CBTE has placed a great deal of emphasis upon field-centered instruction where the student will apply principles learned in an actual school setting. This may include many more instances of "supervised teaching" than would normally be found in a traditional teacher education program. The implications for interaction with local education agencies are obvious, and in some cases, difficult to predict. Logistics associated with field-centered instruction are often extremely complex, especially for universities located in a more rural setting. Generally, areas in which increased interaction is necessary include teacher education institutions, local education agencies, state education agencies, and other interest groups (e.g., NEA, AFT, AVA, NCATE, AACTE).

Instructional Support

In order for any teacher education program to function properly, adequate instructional support must be provided. This may take the form of classroom space, audiovisual equipment, student testing systems, resource centers, and similar items.

As with many instructional programs which break with tradition, CBTE requires that support be realigned to fit its unique needs. This realignment is, for the most part, necessitated because of a shift from traditional practices to mastery learning and individualized instruction.

Since students will be learning at their own particular rates and demon-
strated competence (rather than grades) serve as records of assessment,
facilities must be available to meet their particular needs. Typically,
a CBTE resource center that contains relevant resources such as references
and media is made available to students. A resource person is generally
located at the center to assist students in the completion of various
module learning experiences. Of course, the lack of such a center may
pose a problem to many teacher education institutions and some persons
may question its practicality. Other potential problems in the instruc-
tional support area include, but are not limited to, making provisions
or in-service teacher education, recording student mastery of various
modules, and resolving conflicts between the academic calendar and varia-
tions in student progress.

Costs

A final area of concern is CBTE program cost. Many persons have
negative feelings about this important aspect of CBTE implementation,
particularly in light of recent budgetary cuts at various colleges and
universities across the country. The primary issue associated with costs
seems to be one of comparisons between CBTE and traditional programs.
Persons inquiring about CBTE generally ask how much more it will cost
or how much more they get for their investment. At this point in time
it appears many are asking about increased institution budgets per se
rather than costs in relation to benefits or effectiveness.

IMPLEMENTATION OPTIONS

When the time actually arrives to implement CBTE, there are several options open. The choice may be made to replace a traditional program with one which is completely competency-based. This, of course, would entail an extensive amount of pre-planning and require that numerous resources be on hand for use by teacher educators and students. Each of the five potential constraints to implementation might have considerable impact on this option since it represents the greatest immediate commitment to CBTE. The choice to completely replace a traditional program also has impact on the way a vocational teacher education program is arranged. If a program deals exclusively with part-time in-service teachers from one vocational service area, the replacement approach will certainly create difficulties but would be nothing approaching the difficulties encountered with a program which includes pre- and in-service teacher education for persons in numerous service areas.

A more conservative option to CBTE implementation might be the offering of dual programs, one of which is traditional and the other competency-based. This choice has a distinct advantage in that it should enable students to choose which program best aligns with their needs and learning styles. There are, however, several potential problems with this option. Even though teacher educators may well recognize that the traditional program will eventually be replaced, the cost of operating two separate programs can sometimes be prohibitive. Other possible constraints might include the confusion over faculty roles and the range of instructional support which may be needed.

A third possible option for the teacher educator is to focus ini-
tially on implementing one CBTE component of the total program. This
choice allows teacher educators and students time to "shake down" the
system and identify and eliminate problems before they show up across
the entire program. It also enables teacher educators to focus on a more
narrow aspect of the program, and thus build high quality CBTE. Taking
the component option route could, however, have a damaging affect on
commitment. Obligations to make a certain number of program components
competency-based each year may soon be overshadowed by other priorities
such as maintaining certain enrollment levels or providing graduate
level studies. Since it is often found that priorities shift dramatically
from year to year, the business of slowly phasing in CBTE may end up
being only partially realized.

A PROPOSED FRAMEWORK FOR IMPLEMENTING CBTE

While it is virtually impossible to speak to all the possible teacher
education program types, implementation constraints, and implementa-
tion options; it is nonetheless important to be aware of what might be
associated with a CBTE implementation effort. Figure 1 serves as a
graphic representation of these areas. Its purpose is to assist teacher
educators in "thinking through" the CBTE implementation process and
recognizing that simple decisions and plans are not always possible. It
may be noted that three dimensions are represented in the schema which
is presented. These constitute the three foci of CBTE implementation:
types of programs, potential implementation constraints, and implementation

Competencies

Materials

Costs

Faculty & Student
  Roles

Interaction with
  other Agencies

Instructional Support

Full CBTE Program

Partial CBTE Program

Parallel CBTE Program
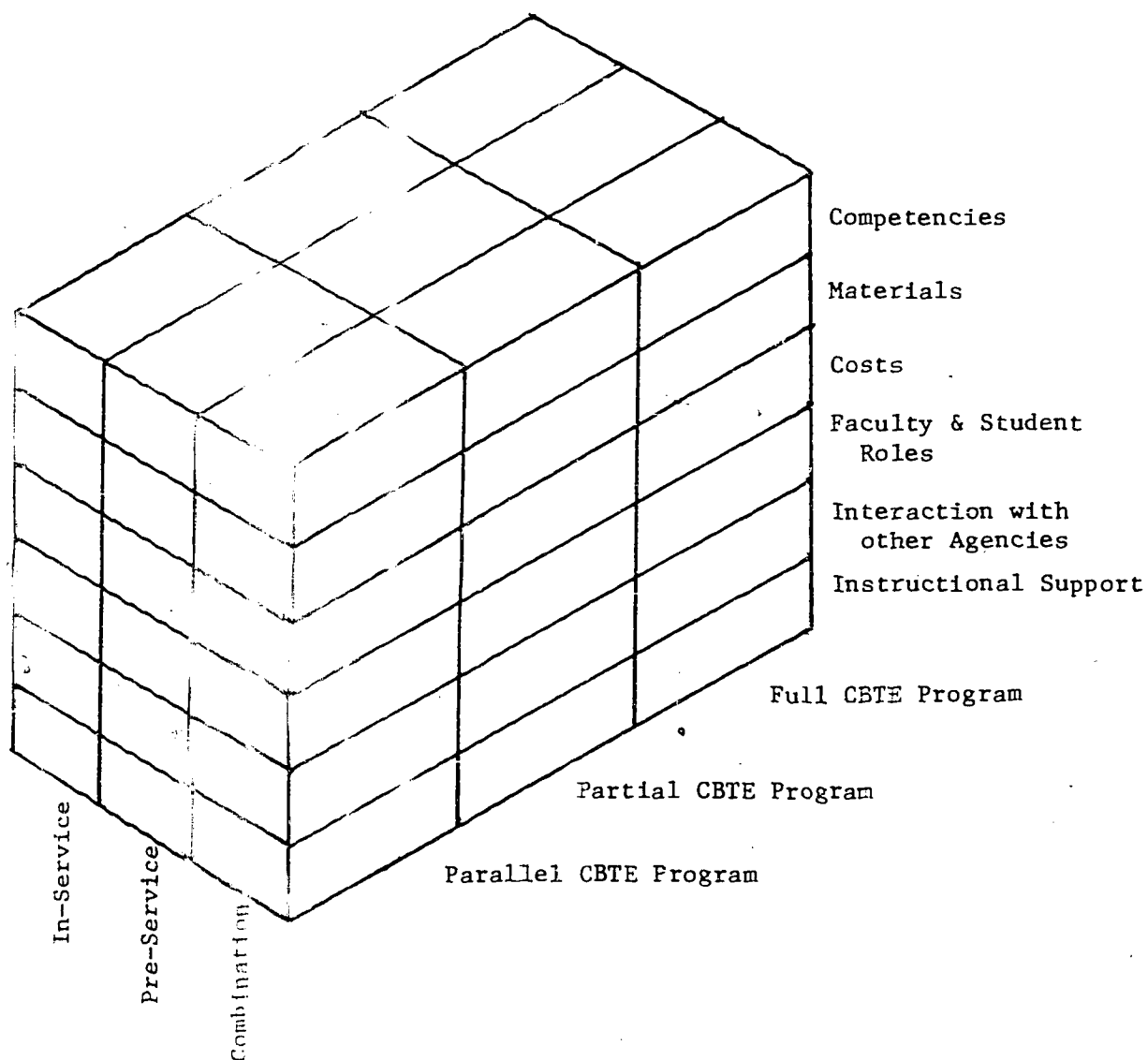
In-Service

Pre-Service

Combination

Figure 1. Factors Associated with CBTE Implementation: A Conceptual
Model*

*Representative factors are provided. No attempt has been made to
be all inclusive.

options. As data are gathered in support of these dimensions, the teacher

educator should begin to see what the best implementation option is for

a particular setting. While one may recognize that this sort of decision-

making is not the most objective in the world, it is much more so than

merely taking the first idea that comes along.

CONCLUSION

This paper does not provide the specific answers to CBTE implementation

that many teacher educators would like to hear. Instead, it has pre-

sented a framework within which the implementation process may be examined

and refined. In fact, each vocational teacher education program is

unique. It is closely tied to a specific set of standards, constraints,

and operational guidelines; each of which must be accounted for as CBTE

is being implemented. The framework which has been presented is designed

to address these unique needs. Hopefully, it will enable teacher educa-

tors to consider the many factors associated with CBTE implementation

and make each new program a stronger one.

REFERENCES

Cruickshank, Donald R. "Conceptualizing a Process for Teacher Education
    Curriculum Development." Journal of Teacher Education. Vol. 22,
    No. 1, Spring, 1971, pp. 73-82.

Finch, Curtis R. and James B. Hamilton. "Performance-Based Teacher
    Education Curricula: Implications for Programs," in (Anna Gorman,
    ed.) The Changing Educational Scene. Columbus, Ohio: The Ohio
    State University, Center for Vocational Education, 1974.

Finch, Curtis R. and James B. Hamilton. "Issues in the Implementation of
    Performance/Competency-Based Teacher Education." Journal of In-
    dustrial Teacher Education, Vol. 12, No. 4, Summer, 1975, pp. 14-21.

Merrow, John G. Politics of Competence: A Review of Competency-Based
    Teacher Education. Washington, D. C.: National Institute of Educa-
    tion, 1975.

Nash, Paul. A Humanistic Approach to Performance-Based Teacher Education.
    Washington, D. C: American Association of Colleges for Teacher
    Education, 1973.

Sinatra, Lewis J. "Performance-Based Teacher Education: It Can Be
    Transformational." Educational Technology. August, 1973, pp. 60-63.

Swanson, Gordon I. The Preparation of Vocational Teachers. Project
    Baseline Supplemental Report, Flagstaff, Arizona: Northern Arizona
    University, 1974.

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