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AUTHOR Kay, Patricia M.
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ABSTRACT

This paper reviews the current state of the art in competency identification procedures for competency/performance based teacher education (C/PBTE) programs within the context of an overall strategy to improve teacher education through the generation of knowledge about teaching and learning. Strengths and weaknesses of theoretical approaches, task analysis procedures, and course conversion methods all suggest the need for further work on methodology and indicate that while there are numerous routes to competency identification, no single route would be best under all circumstances. Theoretical approaches are most likely to result in conceptually unified programs--but can only be useful to the extent that the underlying theories have good explanatory power in the real world. Task analysis procedures for competency identification run the risk of being too firmly tied to what actually goes on in the real world to result in the generation of new knowledge about teaching and learning. Course conversion methods of identifying teaching competencies, while probably the most expedient approach, can easily result in program fragmentation and, unless combined with a more theoretical orientation, are not likely to produce fruitful hypotheses for continuing research. An eclectic approach combining the best features of all these methods may be the most useful for accomplishing the task, although the question of which is the best or most useful can only be answered through a continuing process of program evaluation and competency validation research. (Author/PB)

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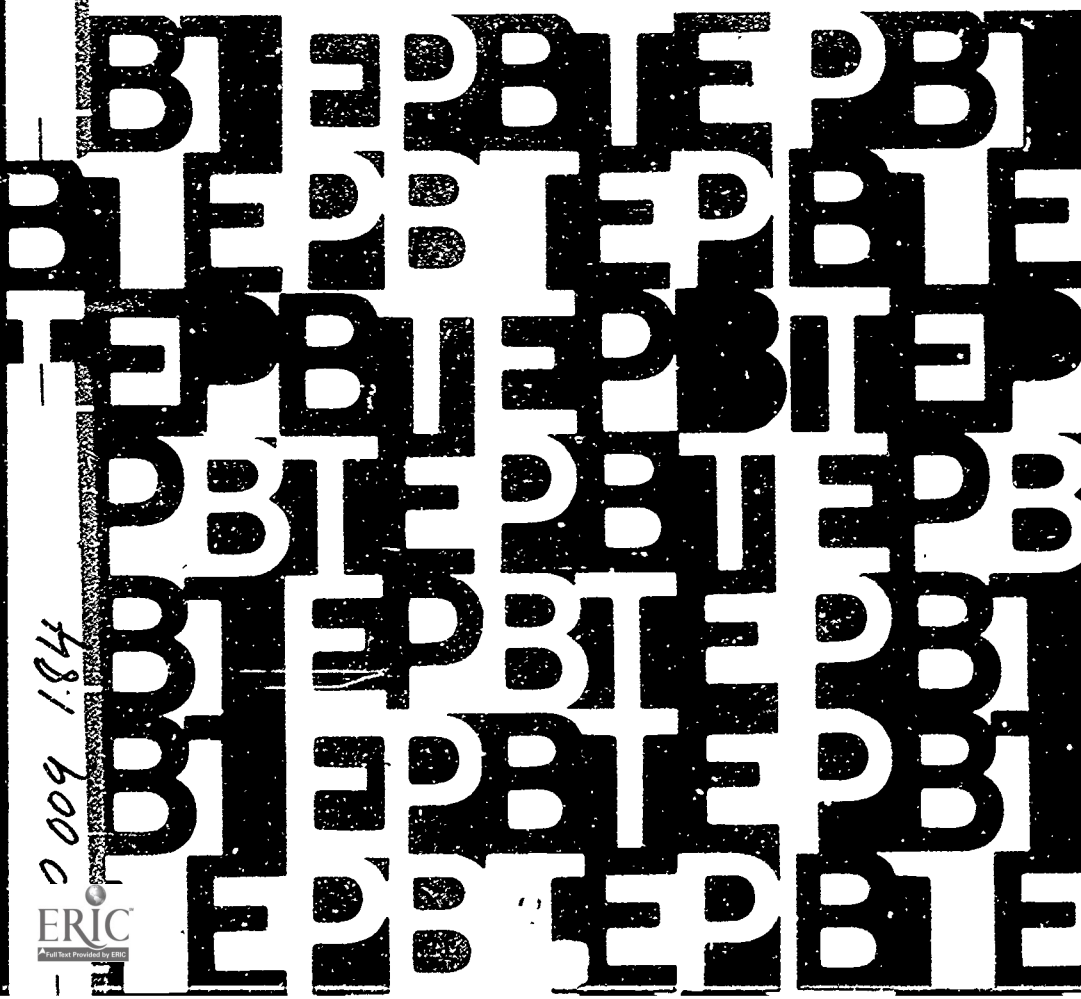

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WHAT COMPETENCIES SHOULD BE INCLUDED IN A C/PBTE PROGRAM?

by

Patricia M. Kay

School of Education
Bernard M. Baruch College
The City University of New York

for the AACTE

Committee on Performance-Based Teacher Education

May 1975

American Association of Colleges for Teacher Education
One Dupont Circle, Suite 610
Washington, D.C. 20036

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Preface

The American Association of Colleges for Teacher Education (AACTE) is pleased to publish this paper as the first in a series of technical assistance papers sponsored by its Committee on Performance-Based Teacher Education (PBTE). Whereas the PBTE monograph series,* also sponsored by the Committee, is designed to expand the knowledge base about issues, problems, and prospects regarding PBTE, this series is targeted more specifically at providing solutions for the practical problems encountered by operators of performance-based programs. The inauguration of the PBTE technical assistance paper series is in part a response to the many requests for assistance received by the Committee from teacher educators who have decided to experiment with a performance-based approach to education personnel development. In addition, the Committee believes that this series will provide an appropriate vehicle for disseminating some of the most effective practices in implementing PBTE programs. However, the opinions expressed in the series of technical assistance papers will reflect the views of the respective authors and will not necessarily carry the endorsement of AACTE or its Committee on PBTE.

One of the early practical problems encountered when designing and implementing a PBTE program is to determine what competencies to include in the training program. What are the competencies required to perform the professional role for which the training program is designed? What are the competencies which trainees must demonstrate before completing the program? It is not the author's purpose in this paper to answer these questions by identifying specific competencies which should be incorporated in PBTE programs. Rather, the author addresses the critical question of how one goes about determining which competencies to include. Her thorough and analytical treatment of what on first thought may seem to be a simple problem provides a significant contribution to the literature on PBTE. She writes from a background of experience in solving the problem of competency identification and specification.

AACTE acknowledges with appreciation the role of the National Center for Improvement of Educational Systems (NCIES) of the U.S. Office of Education in the PBTE Project. Its financial support (provided through the Texas Education Agency) as well as its professional stimulation, particularly that of Allen Schmieder, are major contributions to the Committee's work.

The Association acknowledges also the contribution of members of the Committee who served as readers of this paper. Special recognition is due Lorrin Kennamer, Committee Chairman; David R. Krathwohl, member of the Committee and chairman of its publications task force; Margaret

*For a complete listing of AACTE and PBTE publications write to: Order Department, AACTE, One Dupont Circle, Suite 610, Washington, D.C. 20036

Lindsey and Donald Medley, task force members; and to Shirley Bonneville and Janice R. Sandwen of the Project staff for their contributions to the development of this publication.

Karl Massanari
Associate Director, AACTE
and Director, PBTE Project

"The unique strength of PBTE is that it challenges all who touch it to be open about their intentions and explicit about how they will decide if their hopes are fulfilled. Ends must be made explicit; means must stand the test of relevance. The logic of the performance-based approach places a healthy stress on the use of evidence to test one's ideas and assumption. In these considerations lie what the Committee believes to be its great potentialities.

At the same time, the Committee recognizes that, while sound in theory, PBTE may prove so difficult in practice that its accomplishments fall far short of its promise. Its major shortcomings to date are seen to be superficiality and fragmentation resulting from attempting too much with limited resources, adopting too eclectic an approach and making too narrow an interpretation of PBTE.

Nevertheless, on balance, the Committee believes the potentialities justify a large-scale effort and offers a series of recommendations for improvements in practice."

The recommendations appear in PBTE Monograph #16, entitled "Achieving the Potential of Performance-Based Teacher Education: Recommendations" and is available from the Order Department, AACTE, One Dupont Circle, Washington,D.C. 20036.

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Introduction

Teacher educators are discovering that developing a competency or performance-based program can rapidly become an overwhelming job. Whether the task is to reconceptualize a program and cast it in a performance-based format or to start "from scratch" to design a new one, initial meetings of a program development group may discourage all but the hardiest and most energetic faculty as they begin to recognize the magnitude and complexity of the task ahead. The job of reforming teacher education that C/PBTE addresses has been compared to the task of rebuilding a vehicle while it is in motion.[1] Certainly no one should underestimate the difficulty or complexity of the problem. However, all who have made the decision to attempt the C/PBTE route must understand that the burden of rebuilding the moving vehicle is a nationwide effort of the entire education community. Only then, can the task of program development be addressed with realistic notions of what can be accomplished at each institution and what their own contributions to the overall reconstruction job can be. Of course, all the data about C/PBTE are not in, and that right now there are still more questions than answers. Still, those who would begin now to develop C/PBTE programs have the advantage of a rapidly expanding body of knowledge about how to proceed that has grown in recent years through the efforts of many faculties to reformulate or design and implement new teacher education programs.

The general problem of delineating program outcomes or competencies that will become the goals of training efforts has probably been the major consideration in most recent attempts to build or rebuild programs. It is a problem that is closely intertwined with efforts of researchers attempting to develop a taxonomy of teaching skills so as to get a better handle on the multivariate domain of teaching research. If researchers had solved the taxonomy problem, or were generally further along in answering questions about relationships between teaching effectiveness and school learning, there would be far less debate about what competencies should be included in C/PBTE programs. As it is, teacher educators will have to make rather arbitrary decisions that will later be confirmed or annihilated by research.

Almost everyone who has been involved in C/PBTE has had the experience of receiving the "desperate plea" letter. The general form of this communication is, "Please send us your list of competencies. The Dean has decided that we must have a C/PBTE program by next semester." C/PBTE developers frequently have also been asked to explain how they went about selecting the competencies for their programs.

A number of procedures for competency selection, derivation or specification have been attempted with a variety of results. The purpose of this paper is: to review recent thinking about what competencies should be included in programs, to explore the general problem of competency identification and specification, and to look at several of the available procedures by which institutions may answer the question for themselves. There are numerous ways of identifying competencies that this paper will not explore - primarily because they are either variations on themes or combinations of other approaches, or they are overly simplistic and represent attention to C/PBTE form but not substance.

The methods of determining what competencies should be included in programs and the examples used in this paper were not chosen because there is widespread agreement that they are best. They all have some strengths and some weaknesses. They all represent different solutions to the common problem of deciding from among many teaching skills which will become program objectives. Teacher education curriculum designers at each institution will have to decide which correspond best with their own philosophy, goals and resources. This paper may help with that decision and provide some guidelines for getting on with the task.

Before Competency Selection

In order to successfully choose or use any procedures for competency selection, it is assumed that some critical first steps have been taken. First, it is assumed that membership of the program development group has been determined and that, generally, the rights and responsibilities of each has been agreed upon. The question of *who* shall set competencies may be as important as *what* competencies. In some instances, the group may be composed entirely of college faculty and the development of new relationships may not be an important factor. It is more likely, though, that a C/PBTE program development group would be composed of public school teachers and administrators, teacher education students and other interested parties in addition to college faculty. The expanded decision base of a multi-constituency C/PBTE consortium has many positive features but this approach does require that relatively new and sometimes difficult relationships be established. The job of setting program goals may very well be a legitimate concern of all the constituencies but it would be extremely difficult to address that concern without mutual understanding of roles and without having laid some groundwork for developing consensus.

In addition to roles, rights and responsibilities, which, in a sense, address the political base for program development, the question of resources needs attention. Perhaps it is too obvious a concern, but there are too many beautiful sets of plans for teacher education programs and projects that are gathering dust because of a lack of initial awareness of the constraints within which a program could operate or the resources available to it. Realistic decisions about what competencies should be included in a C/PBTE program may depend to a great extent on a program development group's initial knowledge of the unique personal skills available to it in addition to material resources and constraints involving money, space, time, computer facilities, public school classroom and the like.

The political and practical prerequisites for entering the competency selection phase of program development are joined by another equally important first step. The availability of an explicit program philosophy or set of assumptions about teaching and learning that can become guidelines for what is to be accomplished by the program may possibly be the most important factor in the successful design and implementation of programs. While the need for political and practical groundwork may be obvious; the utility of an explicit program philosophy is perhaps not so

clear. It is a step in curriculum design that is frequently overlooked in the haste to get on with more concrete and perhaps creative tasks of instructional design.

The problem is that *any* competency selection procedure basically involves a series of trade-offs. It has been fairly well established that teacher educators as well as teachers, school administrators, and the general public too often agree that teachers must be all things to all people. One recent study indicated that public school teachers and administrators had great difficulty in ordering priorities among training goals and that they rated almost all teaching skill statements presented to them as essential or very important skills for beginning teachers to possess.[2]

Teacher education program designers could rapidly find themselves in the situation of biting off more than they could chew if they did not have clearly set out guidelines for making choices among the multitude of teaching or teaching related skills that could legitimately become program objectives. Almost any set of role-derived teaching skills could easily contain more than one program could begin to deal with and deliver. While an inventory of constraints and resources helps to make competency selection a realistic and implementable task rather than an academic exercise, a guiding philosophy or set of theoretical underpinnings help to ensure that a cohesive rather than fragmented program is presented to prospective teachers. Teacher trainees are more likely to learn, retain, and view as valuable, a program of skill development that is conceptually unified, built on a substantive theoretical or philosophical base, and at the same time focused on trainable relevant classroom behaviors.

Practical assistance in competency selection and program cohesiveness are two good reasons for investing time and effort in development of a program philosophy. Research payoff is another. It is unlikely that a randomly selected set of competencies or a potpourri of skills will get the education community any closer to solving puzzles about what teaching performances are significant in facilitating desired pupil learning. Having stated what may seem a formidable list of prerequisites to competency identification it is now important to note that, in reality, none of these prerequisites is likely to be fully developed and/or elaborated prior to actual program development. In point of fact, the questions of collaborative relationships, program philosophy, and resources will be dealt with and refined over and over during each phase of work on the program. Nevertheless, initial attention to these concerns is likely to have far reaching effects on the program and will provide tentative guidelines for competency identification.

The Tentativeness of Competency Selection

It is almost impossible to discuss procedures for the selection of competencies for C/PBTE programs without placing those procedures within the context of the overall PBTE strategy. The ultimate power of C/PBTE lies in its ability to increase effectiveness of public school programs

through the generation of knowledge about teaching and teacher training. It is, perhaps, the most ambitious research and development effort ever undertaken in education and can be compared in scope to the task of placing a man on the moon. The salient point is that man did not get to the moon by accident. The journey was planned. It was an iterative process. Each stage was built upon knowledge acquired in preceeding ones, never losing sight of the ultimate goal.

It is not difficult to imagine that in the planning of man's journey to the moon, a good measure of the decision making that went on in Washington, Houston, or other space centers was politically inspired. To say that a process is politically inspired or even primarily political does not necessarily imply irrationality or that there cannot be agreement on rational goals. Selecting competencies for a C/PBTE program may very well be a primarily political process as some have asserted.[3] But each of the political constituencies must look to the long term goal of generating knowledge about teaching and learning through systematic program design, evaluation, and research if C/PBTE is to realize its potential. Then an immediate result will be to regard all chosen competencies as tentative: as testable hypotheses worthy of further study. This will be the case regardless of which procedure is used to select or derive competencies.

It is through the systematic design, development, and evaluation process that must become a hallmark of the C/PBTE strategy that questions about competency selection will ultimately be answered. C/PBTE curriculum designers need to be cognizant of the possibility of discovering that competencies originally agreed on may not be trainable or that some may be better left to on-the-job training or that some may be so easily trainable that including them in a program may be tantamount to sending a cannon to kill a fly. Most importantly, program designers need to be aware of, and plan for, the possibility that today's best guesses about the importance of some teaching skills may become tomorrow's saber-tooth myths.

What are "Competencies"?

Perhaps there are as many conceptions of what teaching competencies are as there are people who have attempted to define the term. Definitions of teaching competencies have ranged from highly specific behavioral objectives delineating all the knowledges, skills, and attitudes deemed necessary for effective teaching--to more generally stated goals reflecting various functions that teachers should be able to perform. Examples of specific behavioral objectives include:

- Given standardized reading test materials, a test manual, and a class of 4th grade children, the teacher will administer and accurately score the test for the class.
- Given a slide projector (model number and manufacturer specified) and set of 35 slides in order, the teacher will correctly place the slides in the projector tray in 1 minute or less.

- Given one column listing 6 major learning theorists and one column listing 10 important characteristics of their learning theories, the student will correctly match at least 9 of the characteristics to the theorist.

Examples of general specifications are:

- The teacher can use a variety of formal and informal methods of evaluating pupils' basic skill development.

- The teacher can effectively use audio-visual aids to enhance instruction.

There are two dimensions to most definitions of what teaching competencies are. The content that is to be included is one dimension; the specificity with which it is stated is another, and both have generated a good bit of discussion.

Content focus - What should be included?

Initially, the content is critical. That dimension could include knowledge, attitude, or skill outcomes or any combination of them. Some C/PBTE designers have used all three: they identify knowledges, skills and attitudes for program objectives and call them competencies. Others have focused only on skills or tasks or functions* that teachers are called on to display or perform. In this paper the word competencies will not imply knowledge or attitude objectives. There are a number of reasons why it makes more sense to concentrate program efforts, including competency definitions on a functions-of-teaching base. By this definition, the previously given example about learning theorists is not a competency.

To say that competencies address teaching skills or functions does not mean that knowledge and attitude outcomes are excluded from the goal structure of a C/PBTE program. In order to perform most teaching functions adequately, it is assumed that some cognitive background is necessary, and few teaching tasks can be accomplished successfully in the

*The reader is warned that the terminology - job functions, duties, tasks, responsibilities, etc. - is unexpectedly complicated and loaded with semantic traps which mak exact word usage difficult. For example, a number of attempts within the context of personnel selection and training to arrange and define roles, functions, duties, tasks in some kind of logical hierarchy have been exercises in futility. This, perhaps, is one of the more serious barriers to the development of a teaching skill taxonomy. The pertinent point for program developers is that undue concern for definition of these terms is probably not a potentially rewarding activity.

absence of appropriate attitudes. It is not inconceivable that the knowledge components of a skill derived program could constitute a major portion of a curriculum. Good teachers are knowledgeable about both their content fields and pedagogy--but the utilization of knowledge in performing the tasks of teaching is the essence of professionalism. If programs are not initially planned to develop within their students the capacity to [illegible] the powerful concepts, principles and ideas available to them, experience has shown that it is unlikely that teachers would routinely develop those applications on their own.[4]

A somewhat similar case can be made about the argument that attitudes should be included as program competencies. Those institutions that choose to be explicit about attitude development as program goals with the expectation of measuring those competencies along the familiar lines of psychological attitude measurement principles (i.e., paper and pencil instruments) are likely to have difficulties in a number of areas. Attitude measurement alone is tricky to say nothing of the enormous task of changing attitudes. Continued efforts to define, measure and research attitudes in this manner are not likely to be very fruitful efforts for teacher educators. Perhaps the problem is that many have forgotten their lessons from psychology about what attitudes are and why paper and pencil attitude measures were developed in the first place. An attitude is a predisposition to behave in a certain manner and attempts to measure those predispositions were developed primarily because of the difficulties inherent in sampling and assessing actual behaviors. For example, parental attitude measures were developed by child psychologists because of the obvious technical and practical difficulties of observing parents' behaviors in their routine interactions with offspring. What parents do and say and show by their actions is what effects children and is of prime importance just as in teaching it is what a prejudiced person does, and says, or displays in interactions with children that causes harm. The point is not that attitudes - and the affective domain generally - ought to be ignored. On the contrary, since what teachers do and say to display affect as they perform the functions of teaching is what has effects on children then it is within the functions of teaching that the domain should be included.

Statements of teaching competencies defined in terms of functions, skills, and tasks of teaching has several other highly practical advantages. It seems reasonable to expect that a professional program built upon explicit job-related skills would provide an easier transition from preservice preparation to inservice job performance and continuing education. In effect, it would be less of a transition than a progression along a continuum of skill development. Skill or function focused programs have the advantage of enabling students to more accurately perceive the part each aspect of their program including knowledge and attitude development plays in their personal goals of preparation to teach.

Specificity focus - How should it be stated?

The second major dimension of what a teaching competency is involves the level of specificity with which various functions, tasks, and skills are defined. In the two examples previously given about the ability to use audiovisual aids, both contain reference to a task of teaching. One, however, is a highly specific statement - in fact, a behavioral objective - while the other illustrates a more general level of description - and still more general statements have been engendered.

This specificity-generality question is surrounded by a great deal of confusion. Much of that confusion is, no doubt, attributable to language complexities. As Norman Dodl so aptly said, "the terminology is purely arbitrary."[3]

However, it may be useful to return to the American Association of Colleges for Teacher Education PBTE Committee's essential characteristics of performance-based programs[8] to see how they have been interpreted in regard to the question of definitional specificity.

The first essential characteristic is:

> "The instructional program is designed to bring about learner achievement of specified competencies (or performance goals) which have been

> - adopted as the explicit objective of the performance desired of the graduate (usually that of recognized practical norm) and

> - stated in advance of instruction in terms which make it possible to determine the extent to which competence has been attained."

This characteristic seems to be primarily an identification and description concern. The second characteristic implies more quantification:

> - "Evidence of the learner's achievement is obtained through assessment of learner performance, applying criteria stated in advance in terms of expected levels of accomplishment."

Interpretation of those characteristics have varied from institution to institution. Some have interpreted those statements to mean that competencies are the same as behavioral objectives and proceed to generate, literally, hundreds of them. Others have interpreted them to mean that in the long run, competencies need to be operationally defined, and the more specific objectives as well as measures of them related to a limited set of generally stated competencies need to be made public.

In fact, either approach may be legitimate as a starting point for competency identification and both are beset by problems. If behavioral objectives are chosen as the level of operationalism to be addressed in

deciding what competencies shall be included in a program, measurement problems may be alleviated but there is great danger that over concentration of the goals will result in program fragmentation. Program developers who start with behavioral objectives will ultimately have to relate each of those objectives to the "performance desired as an end product." It is somewhat akin to attempting to validate theoretical constructs when operational definitions are available but where the corresponding constructs and their interrelationships have not been elaborated. It is highly likely that starting at that operational level will result in an inability to arrive at a unified conception of teaching. There is also the very real possibility of ignoring outcomes that do not readily lend themselves to the behavioral objective format. These are important considerations to be weighed in using some course conversion methods of identifying competencies.

If the decision is made to address a more limited set of generally stated function-focused goals, the problem is that the "list of competencies" cannot stand on its own. Each goal statement (competency) requires further elaboration for precise meaning. Competencies identified in general functional terms can acquire more precise meaning through further specification of theoretical underpinnings and the instructional program, but principally through the measures used to assess the competencies. Many institutions that have chosen this route have found that a major difficulty is in operationalizing their competencies through the development of competency measures and thus, seem to be temporarily stuck at operationalizing a conception of teaching through instruction.

Ultimately, the whole continuum of definitional levels has to be addressed, no matter what the starting point, if the instructional program is to be, in fact, performance-based according to both characteristics. That is, if it is to be grounded in some conception of end product teaching performance that is assessable. It is more likely that starting at a more theoretical level and proceeding to operational will insure a program that is conceptually unified and makes use of a set of competency measures that possess, at least, internal or content validity. That is, the measures may reliably reflect the conception of--or approaches to--teaching that are the program's goals. In reality, as various institutions address the question of what competencies should be included in programs, most efforts weave in and out of several levels. It is as impossible to define all competencies with the same degree of specificity as it is to describe all constructs of social science theory with the same precision. Thus, none of the examples given earlier are "complete" competency statements. With that caution in mind it is safe to say that methods for deciding what competencies should be included in a C/PBTE program differ in the theoretical-operational level at which they initially address competency selection.

Ways of Deciding What Competencies Should Be Included in a C/PBTE Program

Procedures for deciding what competencies should be included in a

program can be grouped in three categories roughly corresponding to the relative degree of operationalism at which they address competency selection. From least to most operational they are: theoretical, task analytical, and course conversion approaches. Probably no finished program is fully theoretically derived or totally based on task analysis or fully course-converted. Most probably contain elements derived from all three kinds of approaches. The classification is useful both as a basis for analyzing what is occurring and for program designers to develop methods by which they can proceed to identify program goals. In the following three sections, these methods will be briefly described and program designers who would opt for one or another approach are referred to further sources of assistance.

Theoretical Approaches

There have been several illustrative attempts to derive teaching skills from theoretical stances. In these approaches a network of relationships between teaching, learning and the contexts in which they take place are hypothesized and programs are devised to educate teachers to perform roles consistent with the hypothesized positions. Joyce and Weil's, *Models of Teaching* and *A General Catalog of Teaching Skills* are extremely rich in material for C/PBTE program developers who have the inclination and resources to begin to develop programs grounded as solidly as possible in social science theory.

Models of Teaching represents Joyce and Weil's attempt to operationalize a number of theories of learning or philosophies of education into sets of teaching strategies. The resulting sixteen models are clustered around four sources: social interaction theories, information processing theories, personal sources, and behavior modification as a source. The models included represent such diverse theories as those of Thelen (group investigation), Ausubel (advance organizer), Rogers (non-directive teaching) and Skinner (operant conditioning).

Models of Teaching is the result of the concern of the authors that "competencies have to mesh with each other conceptually, practically, and programmatically so that the student does not acquire interactive skills for one role and planning and design skills for another".[10] Their belief is that complex teaching performances are not the summation of small behaviors but that training in the smaller behaviors leads to more effective teaching performances. In order to extrapolate and describe the teaching strategies for each model, the authors used four concepts which they called syntax, principles of reaction, social system, and support system.

Syntax addresses the sequence of events that a teacher would follow in performing a role consistent with the theory. Differences among approaches to teaching may be made apparent by simply asking "Where does the teacher begin and what steps would follow?" "Principles of reaction" provide guidelines for teachers' responses to what pupils say and do. Depending on the theory, teachers' reactions may vary from non-evaluative responses to deliberate behavior shaping. Each theory also implies

a unique "social system" in the classroom. The social system for each model can be described in terms of the roles played by teacher and pupil and the classroom social norms. Teaching role under one model is facilitative and under another taskmaster-like. The "support system" for each model refers to additional support necessary to carry out the role consistent with the model. Additional resources may include personality characteristics of the teacher as well as material resources such as texts and films.

Marsha Weil has described the four stage attempt at Teachers College, Columbia University, to operationalize the theories.[10] In their first attempt to train teachers in the models, the syntax and principles of reaction were translated into interaction analysis terminology. The resulting interaction analysis assessments laid the groundwork for the description of basic teaching skills. The process proceeded through a series of theoretical extrapolations, empirical studies, and then the development of clinical assessment measures each item of which is a potential skill behavior from which a training system could be devised.

A somewhat different theoretical approach is taken in some parts of *The Catalog of Teaching Skills* developed at Indiana University. The development of the catalog was sponsored by the Leadership Training Institute for Protocol and Training Materials and its need grew out of the dual recognition that production of high quality materials for training educators in teaching skills is an extremely expensive undertaking and that a taxonomy of teaching skills (both general and specific) would assist in developing cost-effective approaches to materials development. "To be of maximum use," the catalog was developed to provide "a clear, convenient and inexpensive guide for teachers and teacher educators and at the same time fulfill the long-range purpose of moving toward a taxonomy of these skills."

The catalog was developed on the underlying assumption that "specific teaching skills, but not the principal functions of teachers" vary with educational level, subject matter and skills to be taught. The result is a collection of teaching skills grouped around teaching functions and subsumed under various approaches to teaching in specialty areas. The approaches, where possible, are grounded in social science theory. Each skill that is derived in the catalog is further elaborated upon by being accompanied by possible indicators of that skill in real (public school classroom), simulated (college laboratory), or symbolic (college classroom) contexts.

The contrast between four theoretical approaches to socialization and classroom management in Schweinhart and Turner's chapter shows how different positions may be translated to skill statements but still grouped around invariant functions. Table 1 contains, from the four classroom management approaches outlined in that chapter, the names of the theorists, researchers, or writers whose work contributed to the approach and excerpts of skill statements under each approach that indicate how one function, instruction, differs among them.

TABLE 1

Four Approaches to Socialization and Classroom Management*

Approach:	Authoritative	Behavior Modification	Cognitive Developmental	Non-Directive
Theorists, Researchers, Writers	Hudgins Baumrind Wright & Barker Kounin Jackson Hudgins & Ahlbrand	Not specified but B. F. Skinner	Piaget Kohlberg Bruner Werner & Kaplan	Rogers Axline Flanders
Function:	Instructs	Facilitates Student Attainment	Instructs	Instructs
Skill - tasks	Assigns tasks & encourages on-task behavior only Monitors classroom group & individuals Corrects student misbehavior Treats off-task behaviors in accord with their potential consequences Administers corporal punishment properly	Monitors classroom group & individuals Applies differential reinforcement to student behavior	Encourages student initiation & completion of self-planned activities Redirects student's aggressive, destructive or unplanned behavior Limits a student's aggressive or destructive behavior	Establishes & maintains rapport with students Communicates expectations concerning boundaries for student classroom behavior Responds to affective or feeling component of student remark or act by reflecting, clarifying feeling expressed

*From Schweinhart, Lawrence, J. and Turner, Richard L., "Socialization and Classroom Management" in Turner, Richard L. (ed.) *A General Catalog of Teaching Skills.*

Program developers should bear in mind that the catalog does not represent fully developed theoretically derived systems for training or measuring competencies. It was constructed and offered as a guide and represents an initial attempt at organizing some theories, philosophic positions, previous research and prior practice into a number of different approaches to teaching that seem to make sense or are in use in schools today. A commitment to a theoretical approach to competency derivation implies a commitrent to study and research. The general catalog may be useful in beginning efforts to plan that study.

In addition to study and research commitment, theoretical approaches to competency identification demand a high degree of both technical and conceptual expertise among program developers. Theoretical approaches can only be good to the degree that the theoretical model conforms to reality. Reality is always more complex than models and theories generally pick up major features and ignore others in an attempt to provide abstraction and explanation.

Theoretically derived programs may only be successful to the extent that the underlying theories accurately reflect key factors and then accurately translate these features into program.

In addition to the "models of teaching" and "catalog of teaching skills" approaches to theoretical derivation of competencies, several other attempts to derive competencies from theoretical stances deserve attention of those who would prefer to proceed along these lines. The Michigan State University[11], Columbia University[12], and Illinois State University[13] "elementary models" all provide insights for designers who would attempt to translate theoretical positions to teaching competencies.

Task Analytic Approaches

If the operative term for theoretical approaches is "competency derivation" then the phrase for task analytic approaches is "the search for competencies." Task analytic approaches to describing teaching competencies may be more theory building than theoretically derived. These approaches look very carefully and analytically at teaching to discover the skills teachers need to perform classroom roles or to bring about desired pupil outcomes. Variations of task analytic methods include:

1. Job, task, or role analysis based on present teaching jobs borrowed and/or adapted from the domain of personnel selection and training;

2. Using methods somewhat similar to the above, the analysis of teaching tasks associated with important, or widely used or well-developed curriculum packages;

3. Specification of teaching skills through analysis of the needs of school learners and the conditions needed to bring about

learner outcomes;

4. Task analysis based on projections of what teaching roles *ought* to be four, five, or x years hence, and

5. Highly empirical hypothesis-generating procedures for looking at teaching performances and learner growth on selected outcomes that are associated with particular aspects of the performance.

The literature that bears on all of these variations is extensive. It may be helpful to look briefly at some of the methods employed.

Basic task analysis procedures. Task analysis, sometimes called job or role analysis in personnel selection, routinely uses conventional survey techniques for constructing and validating occupational analyses. Applied to teaching, there would be three main phases to task analysis (in its purest form): construction of an inventory of teaching tasks, acquisition of information (usually from teachers) about each task, and then analysis of the information. Figure 1 contains, more specifically, the usual steps of task analysis.

Tasks, in personnel selection and training language, are defined as units of "worker activity intermediate in specificity between a function and work steps or actions"[14]. Tasks usually have definite beginnings and endings, are completed within a limited period of time and their descriptions usually contain two elements, an action verb and what is acted on. Teaching tasks in the inventories are grouped about teaching duties (or functions or the major activities of teachers). In initial attempts at inventory construction the list of tasks under each function may be, and usually is, very extensive because an attempt is made to list all the possible tasks that any teacher might perform. These initial inventories may be based on "armchair analyses" of what teachers actually do in the day to day job of teaching or they may be based on a large number of observations where the observer or teacher keeps a running log of everything the teacher does. They may also be generated by groups of teachers, school administrators, college professors, parents, etc. who speculate on the tasks that teachers perform or ought to perform under different approaches to teaching.[15]

Following the usual task analysis procedures, the inventory would then be submitted, in questionnaire form to a sample of teachers and/or administrators and/or professors to acquire representative information about the tasks themselves and some background data. Ammerman[16] in discussing questions which might be pertinent to ask about the tasks performed by Air Force Junior Officers lists the following:

"1. How often each task is performed by a job incumbent.

2. How often each task should be performed.

3. Proportion of job incumbents concerned with each task.

FIGURE 1.

Steps in Task Analysis*

Construction of Task Inventory

1. Define scope of performance situation
2. Locate written sources of activity statements
3. Draft task & data statements
4. Obtain knowledgeable informants to review initial list
5. Edit and group items
6. Pilot test items

Acquisition of Information About Each Task

7. Determine task information needed
8. Determine appropriate job incumbent sources
9. Prepare and pilot test questions
10. Develop sampling plan and analysis design
11. Print questionnaire
12. Administer questionnaire

Analysis of Task Data

13. Develop inventory record procedures
14. Keypunch task inventory data
15. Compute general summary statistics
16. Record additional tasks written in by respondents
17. Prepare report of analysis results

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*From Melching, William H. & Borcher, S.D. *Procedures for Constructing and Using Task Inventories*, 1973.

4. Importance of each task to effective (business) operation.

5. Existence of a discrepancy between what is done and what should be done by job incumbents.

6. How soon task competence is expected after job assignment.

7. Tasks for which all essential learning can be, and is being adequately acquired on the job in the time available.

8. Tasks for which all essential learning has occurred prior to school attendance.

9. Tasks on which job incumbents are having difficulty in acquiring competence on the job.

10. Tasks for which training difficulties are being experienced.

11. Tasks for which procedures could be improved through school training efforts."

Change "job incumbent" to teacher and "business" to teaching and there would be questions to ask educators about the specific tasks they perform that would be very fruitful for training programs to pursue. Obviously, all the questions cannot be asked about each task without resorting to large scale sampling procedures. Typically, task analyses address the questions of "how often" and "how important" in order to acquire data that will help in sorting out priorities for training needs. Figure 2 illustrates one kind of format that can be used for collecting information about specific teaching tasks.

One of the problems with using any method of asking teachers how often they perform any task, how well they do it or how critical they think it is is that it is difficult to get any large group of teachers to agree on answers. Hence the need for collecting other information about the questionnaire respondents. Depending on the kind of background data requested, task questionnaire responses may be analyzed by teachers' background or personal characteristics, subject matter being taught by respondents or their teaching level, school characteristics or characteristics of pupils in respondents' classes, and so forth.

The completed analysis of task inventory questionnaires provides an indication of the major competencies needed by teachers to function in the real and present world of teaching. Teacher education programs can be designed around the results although program designers are warned that the task requirements of teaching (or any other job) are not directly translatable into curriculum or curriculum goals. Task analysis is only one way of collecting data about typical performance requirements.

The procedures of task analysis just outlined are time consuming,

FIGURE 2.

Format for Task Inventory Questionnaires

TEACHING TASK INVENTORY

Instructions:

After each task, place one check to the left of the double line indicating whether you perform that task frequently, infrequently, or not at all and another check to the right of the line indicating whether you think that task is unimportant or important in planning instruction. Write in any tasks that are not listed that you do when you plan instruction.

Function: PLANNING INSTRUCTION

Tasks:

		frequently	infrequently	not at all		important	unimportant
1.	Interprets diagnostic tests	( )	( )	( )	||	( )	( )
2.	Scores tests	( )	( )	( )	||	( )	( )
3.	Arranges bulletin boards	( )	( )	( )	||	( )	( )
4.	Writes behavioral objectives	( )	( )	( )	||	( )	( )
5.	Constructs tests	( )	( )	( )	||	( )	( )
6.	Orders films, other audio-visual aids. materials	( )	( )	( )	||	( )	( )
7.	Constructs worksheets for practice of skills	( )	( )	( )	||	( )	( )
8.	Arranges materials and equipment	( )	( )	( )	||	( )	( )
9.	Asks librarian for books & references	( )	( )	( )	||	( )	( )
10.	Devises learning games	( )	( )	( )	||	( )	( )
11.	Writes directions	( )	( )	( )	||	( )	( )
12.	_____	( )	( )	( )	||	( )	( )
13.	_____	( )	( )	( )	||	( )	( )

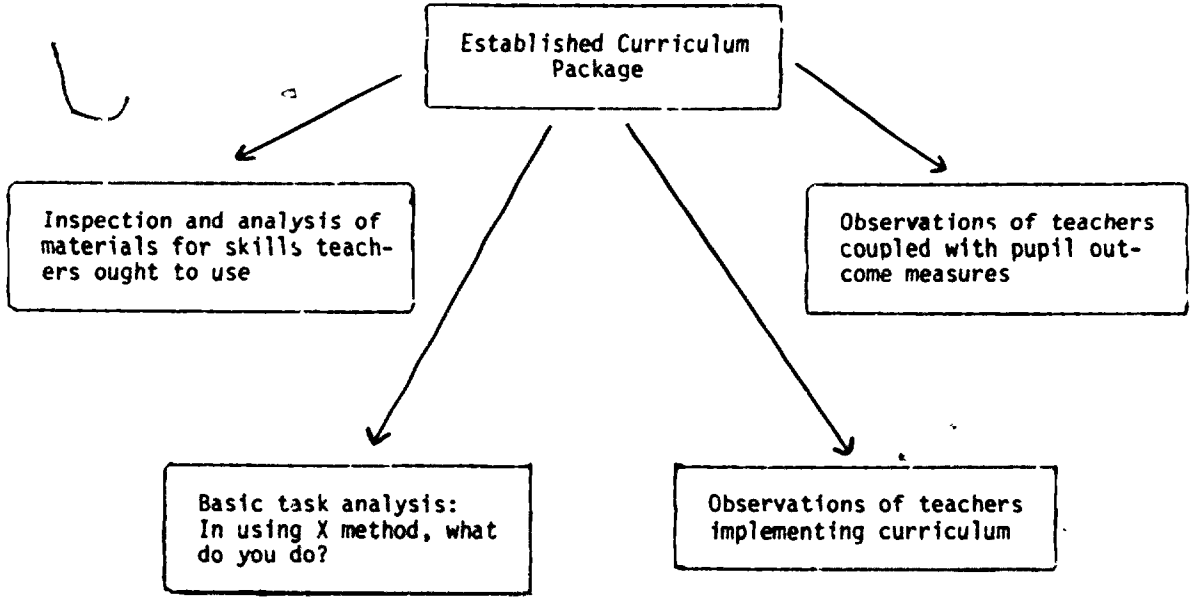
fairly costly and require a degree of technical expertise but much less so, on all three counts, than the demands of theoretical approaches. An important limitation of this method of identifying competencies is that it is firmly oriented to what is going on in public school classrooms today or, at best, what educators think ought to go on in classrooms today. It does not get teacher educators too much further along in systematically developing and testing hypotheses about what [illegible] teaching really entails in the way of teaching performances unless it is also tied to empirical studies where pupil outcomes are related to tack analysis outcomes. The strength of this approach is that it confronts teacher education colleges with the realities of public school classrooms. It is a highly pragmatic approach for attempting to link education programs to the real world of teaching, and there is much to be said for that.

Teaching performance associated with curriculum packages. A variation of task analysis has been suggested that begins with established or well-developed curriculum packages and analyzes the teaching skill demands for implementing them. There is a wide variety of kinds of established curricula arising from different approaches to teaching or differing goals for public school pupils or differing philosophical positions about education. Each variation in curriculum package seems to demand a somewhat different profile of teaching skills on the part of the person using it. Implementing a science textbook series stressing concept attainment demands greater didactic lecture skills of teachers than, for example, the Elementary Science Study (ESS) curriculum where pupil process skills are goals. Because ESS represents a shift from learning "about science to doing science,"[17] there is a corresponding shift from didactic teaching to interactive teaching. In the area of reading, Distar, a highly structured behavior modification-based approach to reading instruction requires specialized training in reinforcement techniques but has built-in sequencing, evaluation, and record keeping while the Bookmark Reading Program involves a standard didactic approach and demands that "a good deal of the job of diagnosing and evaluating student progress, as well as working out varying teaching strategies is left to the teacher."[18]

There are several ways in which using established curricula can lead to identification of competencies for teacher education programs (Figure 3). One is through inspection of the materials themselves, teaching manuals, methods suggested by publishers or sponsors for implementing the programs, and the content of inservice workshops to uncover the profile of skills that, ideally, ought to be called into play by the teacher. Basic task analysis procedures can also be used to acquire typical performance data from teachers using various programs. In this instance, the questions asked of teachers would be "What do you do when you use 'Distar' or 'ESS' or ____?" Another method of finding out what teachers do when they implement certain curricula involves classroom observations. Process-product studies coupling teacher observations with pupil outcome measures can become the bases for discovering the profiles of skills most closely associated with successful use of the programs. Most curriculum methods of competency identification have a similar limitation: just as theoretical approaches are only as good

FIGURE 3

Methods for Identifying Competencies From an Established Curriculum Base



as the underlying theory, so curriculum approaches are only as good as the curriculum packages on which they are based. Process product studies may be one way of validating curriculum packages and identifying teaching competency profiles at the same time.

School learner needs assessment. Several institutions have identified teaching competencies through the analysis of what school children themselves need educationally.[19] These procedures generally require a very close working relationship of teacher education institutions with public schools since they frequently result in program changes in public schools as well as in colleges.

The basic approach in this instance involves a school-college consortium jointly looking specifically at the needs of children to determine the goals of public schools, developing programs designed to meet those needs, and identifying competencies needed by teachers to implement the program. Needs assessment approaches are exemplified by the procedure followed for the Oregon Elementary Model[20] that is represented in Figure 4.

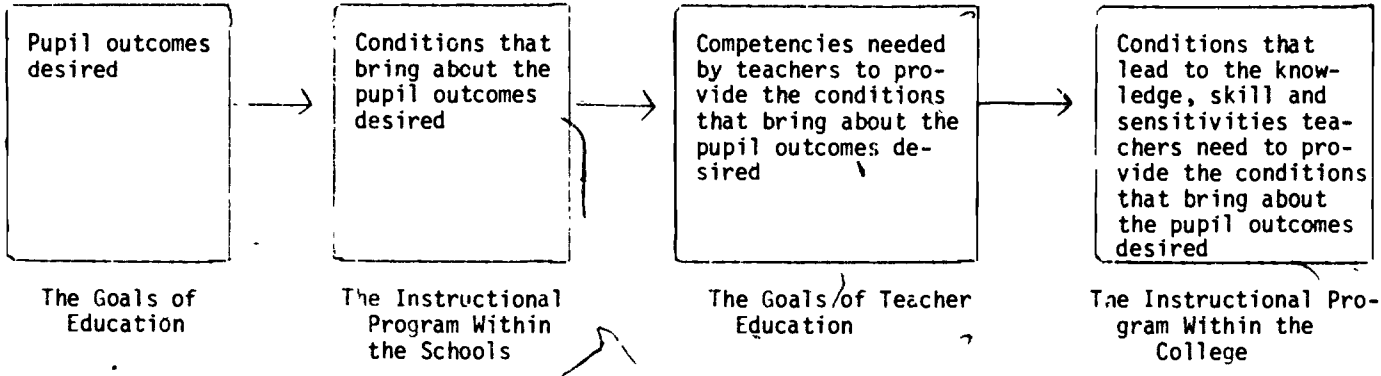
This approach may be tedious and time consuming and seems to involve a great many inferential leaps and untested assumptions about the relationships between the goals of education, school programs, teaching competencies and college programs. It may, however, be a particularly appropriate procedure where a specific sub-population of school children with special needs for instance, (bilingual or handicapped youngsters) has been identified or where there is a need to train teachers for a radically new kind of educational program that is being developed in public schools. Program developers who would opt for this approach will ultimately need to grapple with the inherent inferential leaps and untested assumptions. The basic problem is that the current state of available knowledge does not seem to be an adequate base for any of the steps that need undertaking here.

Analysis of projected teaching roles. A number of suggestions have been put forth for overcoming the here-and-now limitation of task analysis methods of identifying competencies. Variation of basic task analysis methods may use a kind of Delphi technique to arrive at consensus about what kinds of teaching performances are most likely to be necessary at some specified future date. Such procedures would naturally involve projections about what schools of the future will be like, and what kinds of social problems and needs will be prevalent, as well as projecting technological developments to come. Where a program design group is supported by a strong interdisciplinary faculty or has access to a strong instructional technology group, some attention to future-looking may be warranted.

Another approach for projecting what teaching roles of the future may entail and deriving competencies from those conceptions was proposed by Richard L. Turner[21] for the City University of New York's Competency

FIGURE 4.

The Oregon Process for Designing
Learner Oriented Teacher Education Programs*6



*From H. Del Schalock, "Implications of the Oregon Board of Education's Proposed 'Process Standards' for the Design and Operation of Teacher Education Programs: Interpretive Paper #1 - Defining and Assesing Teacher Competence," (Monmouth, Oregon, Teaching Research, Unpublished manuscript), 1973.

Based Teacher Education Project. The procedures he suggested are partially outlined in Figure 5. The analytical procedures in the "programmed approach to assessment" are considerably different from usual task analysis methods. Program designers begin by envisioning the roles of educators and the settings in which they will work about five years from the start of program design (based on the assumption that it will take at least five years to fully implement a new program). The analysis of skills necessary to function in future roles capitalizes on what is currently known about teaching and learning. Program developers are sent directly to the research literature to search for both the theory and research, which may provide operational definitions or specific measures supporting their choice of competencies.

The City University committees that attempted to use the program as a model for identifying competencies found their tasks to be difficult since a number of committee members were previously unfamiliar with much of the research on teaching outside their specialized areas. Based on the experience of the committees the most critical resource for program developers using this approach would be the availability of consultants or staff who are well versed in the literature and some first rate research assistants who both understood the problem and can perform library chores. The result, though, is well worth the effort since competencies identified in this manner are firmly tied to present knowledge, related to future roles, and may have been already operationally defined.

Empirical hypothesis-generating. "Task analytical" may not be a very good term to apply to these elegant, extensive and expensive procedures. The methodology is, in fact, very different. It is similar only in that it looks at teaching to discover what constitutes effective teaching and in that it contributes to rather than derives from theory.

The empirical hypothesis-generating approaches to identifying teaching competencies are probably best exemplified by the California beginning teacher evaluation study,[22] although the curriculum package, process-product approach is somewhat similar.

The California Commission for Teacher Preparation and Licensing was established in 1970 to formulate performance standards for teaching (including objective, standard, verifiable teaching measures) and to investigate alternative methods of demonstrating teaching license qualifications. In order to decide what competencies should be included and how they should be evaluated, the commission undertook a study to determine what teaching behaviors affect student learning in reading and mathematics. The study is divided into three phases: study design generation, hypothesis generation, and hypothesis testing. The design of the study was developed in 1972-73 and hypothesis generation is currently under way.

The research paradigm for the hypothesis generation phase is illustrated in Figure 6. In this phase, data are being collected in the

FIGURE 5

Procedures From a Programmed Approach to
Assessment in Performance Based Education

Main Topics and Decision Points	Guiding Questions	Evidence Bearing on Question
I. Developing a conception of a competent principal, facilitator, counselor, or teacher of _____.	1. Projecting ahead 5 years, in what major kinds of settings do I (we) see this person functioning?	1. Here are the major settings (classroom, office, home, community, group, small group, other. . .) briefly described.
	2. In each setting, what do I (we) see this person doing and what is it critical that he not do?	2. Here are some key terms describing what he is doing. . . (for example: structuring, explaining, diagnosing errors, reinforcing, reflecting feeling, criticizing, organizing a topic hierarchically, reading computer print-outs, constructing tests, re-directing questions, persuading, confronting, giving feedback, classifying behavior, offering heuristics. . .)

From Richard L. Turner, "Performance-Based Teacher Education. A Programmed Approach to Assessment".

FIGURE 5 (Con't)

Main Topics and Decision Points	Guiding Questions	Evidence Bearing on Question
	3. In each setting, what is this person showing in his behavior and what is it critical that he not show?	3. Here are some key terms describing what he is showing. . . (for example: warmth, enthusiasm, neutrality, fairness, consistency, flexibility, factual knowledge of _____, application of _____; empathy, positive regard variation in use of resources, pupil-centered attitude, favorable attitude toward mathematics . . .)
	4. In each setting, are there (5, 10, 15) understandings or knowledges critical to what this person does? Shows?	4. The _____critical understandings for setting #1 are _____ _____ _____
Decisions: 1. The conception is clear: the key terms describing what the person does, shows, and understands have been arrayed. Move ahead. ←		
2. The conception is fuzzy; the work settings are difficult to visualize.		

FIGURE 5 (Con't)

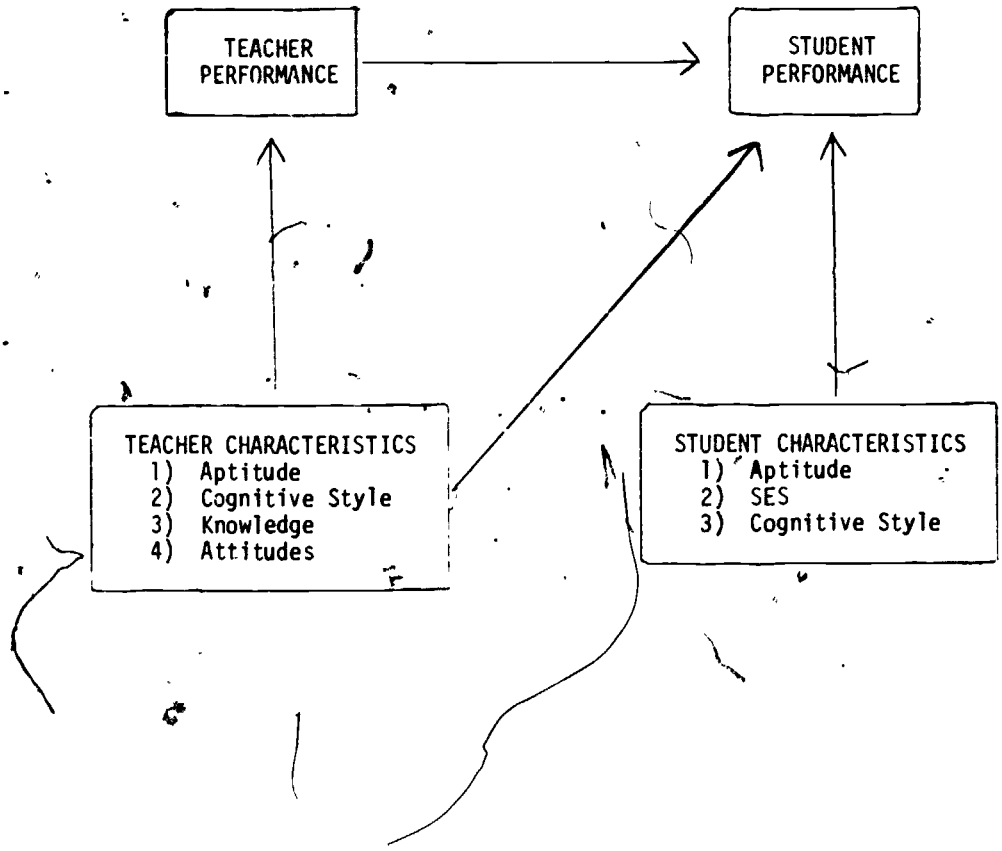
Main Topics and Decision Points	Guiding Questions	Evidence Bearing on Question
What the person is to do, show, and understand are difficult to verbally express; the group cannot agree on key terms. →	See consultant.	
II. Key Term Assessment	1. Of the key terms arrayed in I (does, shows, understands) which have been analyzed and/or operationally defined by other persons or groups? Which have apparently not been analyzed or operationally defined?	1. Of the key terms arrayed: a) here are those for which some kind of operational definition has been given in the literature. Example: variation in use of resources, Denny (1966) pp. 159-160, (item on classroom observation schedule). b) here are those for which an analysis (detailed description or explication) has been offered, but no operational definition can be located. Example: offering heuristics, Snow (1970). c) here are those that seem meaningful, but no analysis or operational definition can be found

FIGURE 5. (Con't)

Main Topics and Decision Points	Guiding Questions	Evidence Bearing on Question
Decisions: 1. Many of the key terms have been analyzed or operationally defined. The group feels confident that the remainder can be analyzed and operationally defined. Move ahead.	2. Has the literature search suggested additional key terms?	2. Here are some key terms encountered in the literature search which might be added to the original conception.
2. The key terms do not appear in the literature, analysis of key terms is needed. →	See consultant. Take program loop on analysis of key terms.	
3. The key terms in the original conception were had. Return to conception and try again. ←		

FIGURE 6.

The California Beginning Teacher Study
Research Paradigm*



*Reprinted from Virginia Koehler, 'The California Beginning Teacher Evaluation Study" *IRE Newsletter*, Vol. 2, March 1974.

classrooms and school districts of just under 100 participating beginning teachers. Measures of student growth in mathematics and reading--both skill and attitude development--are dependent variables, teaching performance--observations--the independent variables, and a host of student, teacher and school characteristics are influencing--moderating--variables. Data on student outcomes are being collected at two points in time and the data analysis will seek to differentiate the performance of teachers whose students do better than expected when their post-scores are regressed on pre-scores. Path analysis is being used to sort out the effects of teacher, student and school characteristics on the relationships between teacher performances and student outcomes.

The third stage of the California study will seek to establish "solid empirical relationships" between the teacher variables and pupil achievements identified in the hypothesis generating phase. The third stage is projected to take two years to complete and during that time data will be collected from many more beginning and experienced teachers.

Few teacher education institutions have the resources or research committment to attempt to identify competencies in this manner and build training programs on the results. The National Commission on Performance Based Education is attempting to coordinate several similar studies with state education departments, colleges and professional organizations around the country.[23] The results of these studies will help institutions to more accurately identify the competencies that should be included in C/PBTE programs - particularly if the results are confirmed in several locations other than California. Program designers with the inclination to identify teaching competencies in this manner and use the results of such studies in their institutions will have to follow closely the work of the California Study and the National Commission.

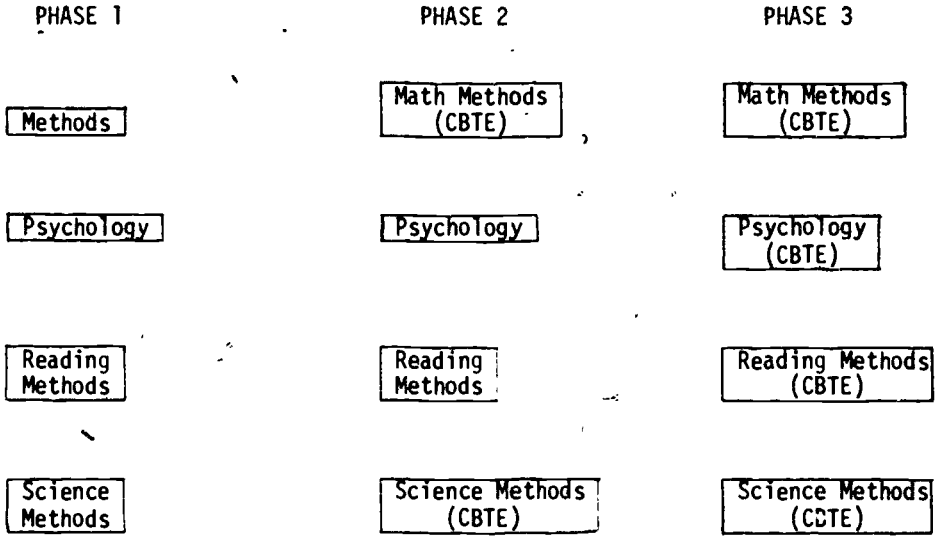
Course Conversion Approaches

Possibly the most common method in use today of identifying program competencies, particularly in states where C/PBTE is mandated, is program translation or course conversion. In a nutshell, this method is simply the reformulation of current courses with course requirements rewritten as behavioral objectives. Houston has outlined two different ways of approaching program translation: isolated course program translation, and separate courses translated into generic teaching competencies with special areas. Figures 7 and 8 are reprinted from his book *Strategies and Resources for Developing Competency Based Programs*[16] and illustrate the procedures. In the isolated course conversion, all courses are individually rewritten with behavioral objectives and gradually, the instruction of each may be converted to a C/PBTE mode. In the other, common aspects of each course are identified as generic competencies and the remaining course content restructured to support the central core of competencies. This latter approach may ultimately involve the breaking down of course and time structures.

The major limitation of these methods has been pointed out already.

FIGURE 7.

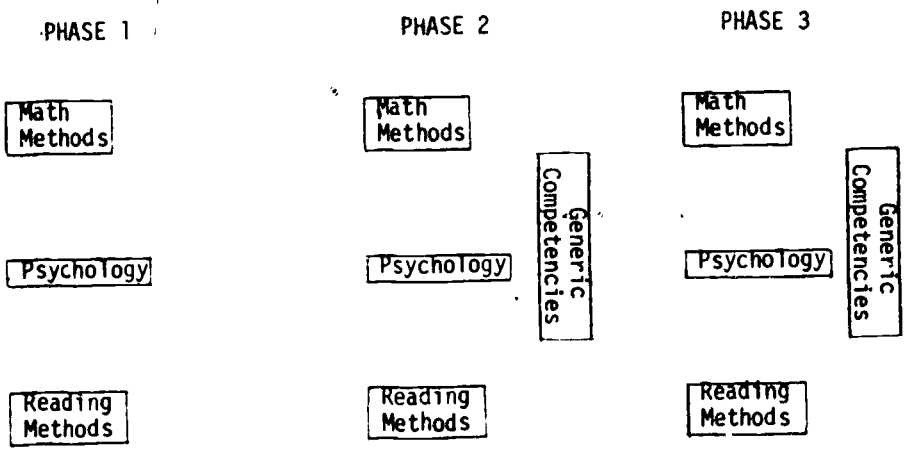
ISOLATED COURSE PROGRAM TRANSLATION*



*Reprinted from Houston, Robert W., *Strategies and Resources for Developing a Competency Based Teacher Education Program*, October 1972.

FIGURE 8.

Separated Courses Translated Into Generic Teaching Competencies with Special Areas*



*Reprinted from Houston, Robert W., *Strategies and Resources for Developing Competency Based Teacher Education Programs*, October 1972.

The degree of success in using this approach would seem to be roughly equivalent to the degree to which the original "traditional" program is conceptually unified and up-to-date in terms of relating to the best knowledge currently available. Course conversion approaches are not likely to result in any major changes or reformulations of programs. If a program development group starts the process of identifying competencies with lists of behavioral objectives, perhaps the best that can be hoped for is that the clustering of objectives may lead to new conceptions of curricula. At that point, if a theoretical approach can be combined with course conversion, new ideas on competencies may emerge.

In spite of the limitations of course conversion approaches with respect to the long term C/PBTE strategy, there is no doubt that such change strategies are expedient - particularly for program designers who wish to change quickly. Institutions with meager resources but where many of the characteristics associated with C/PBTE programs (individualization, modularization, personalization, etc.) are seen as viable alternatives to current program characteristics will likely continue to use translation methods of reformulating programs or aspects of them. To the extent that those outcomes can be realized, course conversion approaches are useful.

Summary

This paper has attempted to review the current state of the art in competency identification procedures for C/PBTE programs within the context of an overall strategy to improve teacher education through the generation of knowledge about teaching and learning. Strengths and weaknesses of theoretical approaches, task analysis procedures and course conversion methods all suggest the need for further work on methodology and indicate that while there are numerous routes to competency identification, no one of them alone would be best under all circumstances. Theoretical approaches are most likely to result in conceptually unified programs - but can only be useful to the extent that the underlying theories have good explanatory power in the real world. Task analysis procedures for competency identification run the risk of being *too* firmly tied to what actually goes on in the real world to result in the generation of new knowledge about teaching and learning. Course conversion methods of identifying teaching competencies while probably the most expedient approach, can easily result in program fragmentation and, unless combined with a more theoretical orientation are not likely to produce very fruitful hypotheses for continuing research.

While all of the ways of identifying competencies have limitations, it is unlikely that C/PBTE program development will stand still while awaiting a better method. In reality, an eclectic approach combining the best features of all the methods may be the most useful for getting on with the task. In the long run, however, the question of which is the best or most useful can only be answered through a continuing process of program evaluation and competency validation research.

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