DOCUMENT RESUME

ED 102 095 95 SP 008 800

AUTHOR Howey, Kenneth
TITLE Promising Practices in the Training and Renewal of Teacher Educators.
INSTITUTION ERIC Clearinghouse on Teacher Education, Washington, D.C.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Feb 75
NOTE 64p.

EDRS PRICE MF-$0.76 HC-$3.32 PLUS POSTAGE
DESCRIPTORS Alternative Schools; Computer Assisted Instruction; Models; Performance Based Teacher Education; *Teacher Educator Education; Teaching Methods

ABSTRACT

This monograph reviews a variety of trends and programs in the preservice and in-service training of teacher educators. Diversified instructional formats are discussed, as represented in the Keller Plan, directed study, the Stanford catalogue of teacher training products, and protocol materials. The methods of computer-assisted instruction and the use of consulting groups (as in the Minnesota "Field-Plot" model and the Western Kentucky model) are also explored as vehicles that are being used to train teacher educators. Finally, the implications of competency-based teacher education and of alternative teacher education programs for the training of teacher educators are revealed. A 25-item bibliography concludes the paper. (LP)

PROMISING PRACTICES IN THE TRAINING AND RENEWAL OF TEACHER EDUCATORS

by

Kenneth Howey

Published by

ERIC Clearinghouse on Teacher Education
Number One Dupont Circle, N.W.
Washington, D.C. 20036

Sponsored by: American Association of Colleges for Teacher Education (fiscal agent); Association of Teacher Educators; Instruction and Professional Development, National Education Association

February 1975

SP 008 800

The material in this publication was prepared pursuant to a contract with the National Institute of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Prior to publication, the manuscript was submitted to the University of Miami for critical review and determination of professional competence. This publication has met such standards. Points of view or opinions, however, do not necessarily represent the official view or opinions of either the University of Miami or the National Institute of Education.

CONTENTS

Preface. v

ERIC Abstract and Descriptors. ix

Prologue xi

PUTTING THE PROBLEM OF TRAINING IN PERSPECTIVE 1

INITIAL PREPARATION OF TEACHER EDUCATORS 7

Prototypes. 8
Stages of Faculty Development 10

TOWARDS IMPROVED TEACHING. 12

The NIE Focus on Teaching and Teacher Education 12
An Expanded Notion of Teaching. 14
Teaching Models--Teacher Educators. 14

TOWARD DIVERSIFIED INSTRUCTIONAL FORMATS 19

The Keller Plan 19
Directed Study. 22
The Stanford Catalogue of Teacher Training Products 25
Protocol Materials. 26

COMPUTER ASSISTED INSTRUCTION AS AN AID IN THE TRAINING AND DEVELOPMENT OF TEACHER EDUCATORS 28

CATTS 28
Integrated Media. 30

EXTERNAL SUPPORT FOR THE TRAINING OF TEACHER EDUCATORS 32

The Danforth Foundation 32

INTERNAL CONSULTING GROUPS AS A VEHICLE FOR TRAINING TEACHER EDUCATORS. 34

Minnesota "Field-Plot" Model. 34
The Western Kentucky Model. 35

COMPETENCY-BASED TEACHER EDUCATION: IMPLICATIONS FOR THE TRAINING OF TEACHER EDUCATORS. 36

Implied Characteristics 39
Related and Desirable Characteristics 40

ALTERNATIVE TEACHER EDUCATION PROGRAMS--IMPLICATIONS FOR TRAINING THE TEACHER EDUCATOR. 41

Project Open. 41
The Matrix Organization 43
Faculty Teaming 46

CONCLUDING THOUGHTS AND RECOMMENDATIONS. 47

BIBLIOGRAPHY 50

About ERIC 53

ERIC Order Blank 55

PREFACE

If the role of the teacher is an increasingly complex and demanding one, then the role of the teacher educator could be assumed to be even more challenging. The teacher educator must build and display problem-solving tools for the teacher, and he assumes a range and variety of roles in doing this. He is not just a teacher of teachers; he is a scholar, writer, politician, counselor, and institution builder as well. He lives in a world of diverse, often contradictory, expectations on the one hand and shrinking budgets and resources on the other.

The comfortable state of lecturing teachers about a single model classroom is anachronistic. Articulate expressions of alternative schooling models are evolving, and the need for further definition of and assistance with new teacher roles and teaching styles is a pressing one.

It is increasingly apparent that whatever the teacher educator does for the beginning student of teaching reflects but the tip of the iceberg in terms of that teacher's education. The shifting focus to continuing teacher education has received its impetus from the current inability of school systems to enlist and utilize many of the newly graduated teachers. The resultant shrinking undergraduate enrollment in colleges of education could allow the colleges to confront more seriously the multidimensional problem of continuing renewal for the classroom teacher--the submerged part of the teacher education iceberg.

While a core of basic expectations for our schools will remain, many other schooling functions will be substantially modified and still others added in the years ahead. This mandates *continuing* teacher education as the primary focus for the teacher educator, however important beginning teacher education may be and whatever current policies and economics may dictate with respect to the supply of and demand for new teachers. It is hoped that legislators and other funding agents will acknowledge this need and support the better integration of teacher educators into changing school systems. More collaborative programs and better delivery systems of teacher education demand considerable time, effort, and expense. If colleges of education are budgeted primarily on undergraduate body count, then bold new programs integrating preservice education to continuing education will not occur, and colleges of education and teacher educators will become increasingly vulnerable.

The shift in emphasis to training for a growing diversity of teacher roles and increased field-based teacher training confronts the teacher educator not only with conceptual but also with political challenges. Responsibility for the continued renewal of the certified teacher is very much in an arena of shared power. Examples of a more extended role for teachers in the definition and direction of teacher education are manifest. The reorganization of the National Council for the Accreditation of Teacher Education at the national level, new standards and licensure commissions at the state level, and continuing renewal boards at the local level all reflect the strengthened bargaining power acquired by teachers. Whatever

naive notions may have existed about teachers awaiting the word from "on high" should now be totally dispelled. The rhetoric of interinstitutional collaboration and governance, when translated into reality, suggests major adjustments for many teacher educators.

The test of the teacher educator's political mettle is not limited to new dialogue and negotiation outside the college--a dialogue, one might add, for which he has had little experience or training. The basic reward structure within many colleges, especially major universities, often constrains his attempts to accommodate needs and demands outside that institution. Innovation in teaching and programmatic effort are often not the bench marks against which the teacher educator is evaluated and subsequently rewarded. While the degree to which quality teaching is rewarded may be debatable, the degree of effort put forth to acquire evidence of good teaching and assist teacher educators in improving their teaching is not.

This latter point is made not to demean the effort that the teacher educator puts into scholarly inquiry in the form of research and publication. On the contrary, research on teaching and teacher education is a fragile flower at best and is entitled to broader cultivation and more nourishment than it currently receives. Many estimates have been made of the number of teacher educators who actually publish, and if conservative estimates are considered, 75 per cent of college-based teacher educators never share their efforts in print. Such an estimate suggests an unfortunate separation of roles. The teacher educator should be expected to engage in scholarly inquiry, but that scholarly inquiry should result in more visible assistance to the practitioner than has been the history of much of this effort. The same principle applies to the teacher educator's teaching. It is the utility of *both* his research and teaching to improved classroom practice in the schools that, in the final analysis, should provide the criteria for his evaluation. The reward structure of the teacher educator should acknowledge this synthesis of effort and not a list of publications.

Formal structures to assist the beginning teacher educator in scholarly inquiry and publication are rare. Collaborative efforts in research and publication are too often a product of expediency, familiarity, or chance. Knowledge of, let alone access to, sources for publication are not included in the initial credentials of many professors. A more formal support system for collaborative research and writing and better access to and development of sources for publication also speak to the problems of the teacher educator. The traditional triad of expectations for the teacher educator in terms of scholarship, teaching, and service must now more than ever be integrated functionally and rewarded equally. Not only must the teacher educator respond to the turmoil of need created by changing schools; he must also assume a more visible leadership role in providing direction, definition, and order. Only the scholar-teacher can do this.

The existing resources of many colleges are not well utilized in the initial preparation and continuing renewal of teacher educators. Grandiose schemes are not needed for improved training, but a better identification and systematic structuring of available resources is imperative. If fiscal constraints make dial access or sophisticated computer-assisted instruction

an impossibility, more effective use of techniques such as video tape replay or conference telephones may be feasible and would be a welcome addition for many professors and students. A sophisticated educational personnel development center, jointly sponsored by school and college, might not come off, but a more systematic rotation of professors to joint appointments or clinical assignments just might. A full-blown competency-based program may not be possible or even desired, but the support of module construction by a portion of the faculty, the development of a resource bank, or revised field experiences probably can be facilitated.

Any efforts intended to meet the diverse needs of teacher educators must be multifaceted. Renewal efforts can range from technologically-based, interinstitutional instructional systems to a single individual's concern for more productive interaction in a lecture-discussion. This monograph reflects some of the range and variety of resources and activities that teacher educators and those responsible for assisting teacher educators in their renewal can turn to or engage in for help in their difficult task.

ABSTRACT

This monograph reviews a variety of trends and programs in the preservice and in-service training of teacher educators. Diversified instructional formats are discussed, as represented in the Keller Plan, directed study, the Stanford catalogue of teacher training products, and protocol materials. The methods of computer-assisted instruction and the use of consulting groups (as in the Minnesota "Field-Plot" model and the Western Kentucky model) are also explored as vehicles that are being used to train teacher educators. Finally, the implications of competency-based teacher education and of alternative teacher education programs for the training of teacher educators are revealed. A 25-item bibliography concludes the paper.

ERIC DESCRIPTORS

To expand a bibliography using ERIC, descriptors or search terms are used. To use a descriptor: (1) Look up the descriptor in the SUBJECT INDEX of monthly, semi-annual, or annual issue of Resources in Education (RIE). (2) Beneath the descriptors you will find title(s) of documents. Decide which title(s) you wish to pursue. (3) Note the "ED" number beside the title. (4) Look up the "ED" number in the "DOCUMENT RESUME SECTION" of the appropriate issue of RIE. With the number you will find a summary of the document and often the document's cost in microfiche and/or hardcopy. (5) Repeat the above procedure, if desired, for other issues of RIE and for other descriptors. (6) For information about how to order ERIC documents, turn to the back pages of RIE. (7) Indexes and annotations of journal articles can be found in Current Index to Journals in Education by following the same procedure. Periodical articles cannot be secured through ERIC.

TOPIC: *Promising Practices in the Training and Renewal of Teacher Educators*

DESCRIPTORS

*Teacher Educator Education; Teaching Methods; Computer Assisted Instruction; Performance Based Teacher Education; Alternative Schools; Models

---

*Asterisk indicates major descriptor.

PROLOGUE

There are some who no longer seek at all and, worse, some who only seek to look like searchers. There are those who agree with or defer to the latter. And, finally, there are those who search and genuinely test what they believe. These latter I would call teachers. The cornerstone of any promising practice is this personal spirit of inquiry and the courage to move toward new horizons. It is hoped that this paper will contribute to that sense of purpose and high obligation of the teacher educator.

PUTTING THE PROBLEM OF TRAINING IN PERSPECTIVE

The training demanded to be an effective teacher educator, as with any teacher training, is a continuing process. While this training must focus on far more than teaching, improving teaching is central to the role of the teacher educator. Teaching is a complex phenomenon that often eludes concise definition and adequate evaluation. In the last two decades alone over 3,000 studies have attempted to isolate the variables related to effective teaching. These studies, while valuable, have yet to identify definitive criteria against which to judge teaching effectiveness.

The difficulty of such measurement efforts is understandable when one reflects upon the myriad types of teaching interactions that take place in myriad types of contexts with considerably diverse students for varying lengths of time. Skills required in college teaching range from those needed for media-assisted lectures and demonstrations for groups of a hundred or more to those needed in the individual counseling provided doctoral students. The complexity of this one dimension of the teacher educator's role suggests the breadth of the problem in training teacher educators. Some attention to how these diverse needs can be met is justified before specific training resources are reviewed. The following assumptions are posited with respect to the training of teacher educators:

1. While the primary responsibility for professional renewal rests with the individual teacher educator, responsibilities for assisting in the identification of his needs and for providing access to resources and support for meeting those needs rest primarily with his institution.
2. Professional renewal is but partially related to the formal processes of evaluation and promotion. Formal evaluation provides one perspective for possible priorities in professional development and also ensures that institutional expectations are being met. However, the process of continuing renewal is much broader. It is a dynamic and integral aspect of any scholar-teacher's role and, to a considerable extent, defines much of his activity.
3. Promising practices in the training or renewal of teacher educators must then be defined not so much in terms of formal programs as in terms of a system that can respond effectively to their multiple and diverse needs.

Musella has developed a model that illustrates the range of activities in a faculty-sponsored program for staff renewal (see Fig. 1).[1]

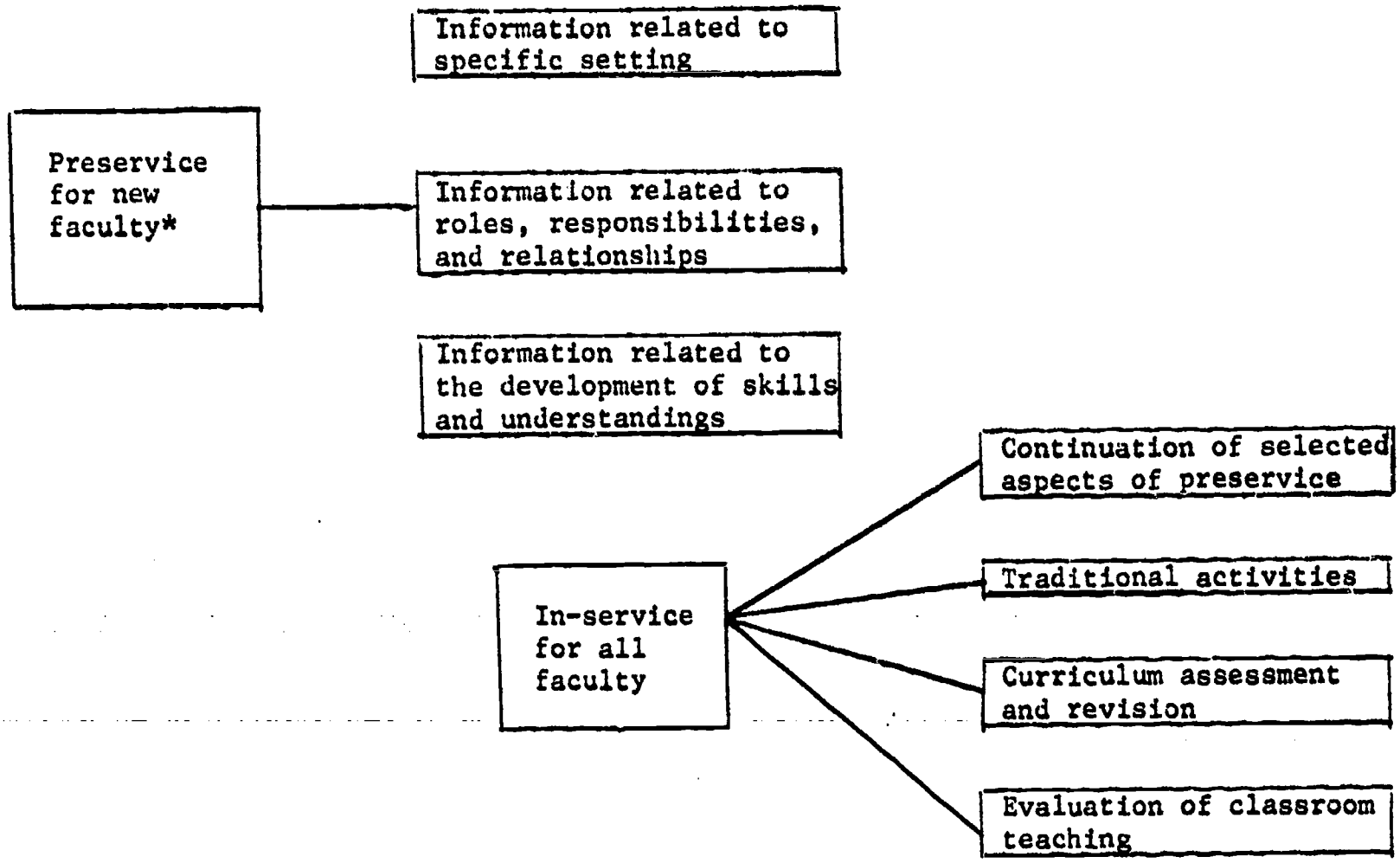
Musella's model provides a frame of reference from which to identify basic elements that contribute to the improvement of college teaching, broadly defined. He acknowledges that this frame of reference would vary from institution to institution. Musella goes on to elaborate upon the

---

1. Donald Musella, "A Model for Improving College Teaching," Improving College and University Teaching 19, no. 3 (Summer 1971): 198.

FIGURE 1

A MODEL OF PRE- AND IN-SERVICE TRAINING FOR TEACHER EDUCATORS



* A further distinction may be made between faculty new to college teaching and faculty new to the specific setting.

three types of information identified in the preservice component. This outline of activities is hardly radical in terms of its substance, and one could offer several modifications in terms of the basic skill development activities he identifies. The model is, however, a good illustration of the type of orientation activities that are needed and are too rarely implemented in a systematic manner. Not only the professor, but the institution and students as well, are shortchanged when not enough is done formally to minimize the transition into a new setting. The orientation activities reflected in this outline would be a welcome addition at many teacher education institutions.

The purpose of the preservice education programs is to provide the new college teacher with the information, understanding and skills considered to be important and useful to him as an effective teacher in that specific setting. Preservice education is directed primarily at those faculty members who are new to the specific college or university setting. For the purpose of organization, the content of the preservice activities has been categorized into three areas:

1. Information related to the specific setting.
2. Information related to roles, responsibilities and relationships.
3. Information related to the development of skills and understandings.

The content of information related to the specific setting is quite obvious. The individual new to the setting needs information related to facilities, resources and personnel. He needs to know the educational programs, the student and faculty populations, the recruitment and testing programs, and the availability of human and nonhuman resources and assistance. In short, the new college faculty member should be exposed to a planned presentation and discussion of the total setting (defined in its broadest sense).

New faculty members should become aware of the present faculty's views on the role of the college and university in both the global and immediate settings. The responsibilities of the faculty, and more specifically that of each individual faculty member, should be quite clear to all. More definitive categorization of responsibilities may be examined in the light of responsibilities to students, to the institution, to the profession, to colleagues and to one's self. One example of the responsibilities to be covered in this part of the program are those related to student guidance and counseling in course selection, independent study and career aspirations.

The formal relationships between offices and between personnel, especially including the channels of communication, should be an important aspect of any orientation program of any institution. The operational procedures and expectations of the large university are quite complex. Knowledge and understanding of roles, responsibilities and relationships often can minimize operational problems.

The session on information related to the development of skills and

understandings should perhaps be more extensive than the other two. Included in this session should be the following:

1. Test construction and evaluation techniques.
2. Development of behavioral objectives.
3. Use of large-group teaching techniques.
4. Use of small-group techniques (group dynamics).
5. Use of media for teaching (equipment and materials).

Most of the above activities are self-explanatory. They list definite skills to be mastered as well as possible alternatives to various classroom teaching techniques. For example, one of the small-group technique sessions could include the use of the training experiences similar to those developed by the National Training Laboratory Institute for Applied Behavior Science.[2]

Most, if not all, of the activities identified in this model could be reviewed on a continuing basis by experienced as well as beginning teacher educators. Certainly, planned skill development activities would be appropriate for most faculty to engage in periodically throughout their careers. The continuing development and reorganization which is characteristic of most progressive institutions suggests that a continuing review of personnel resources, institutional priorities, and operational guidelines is a must.

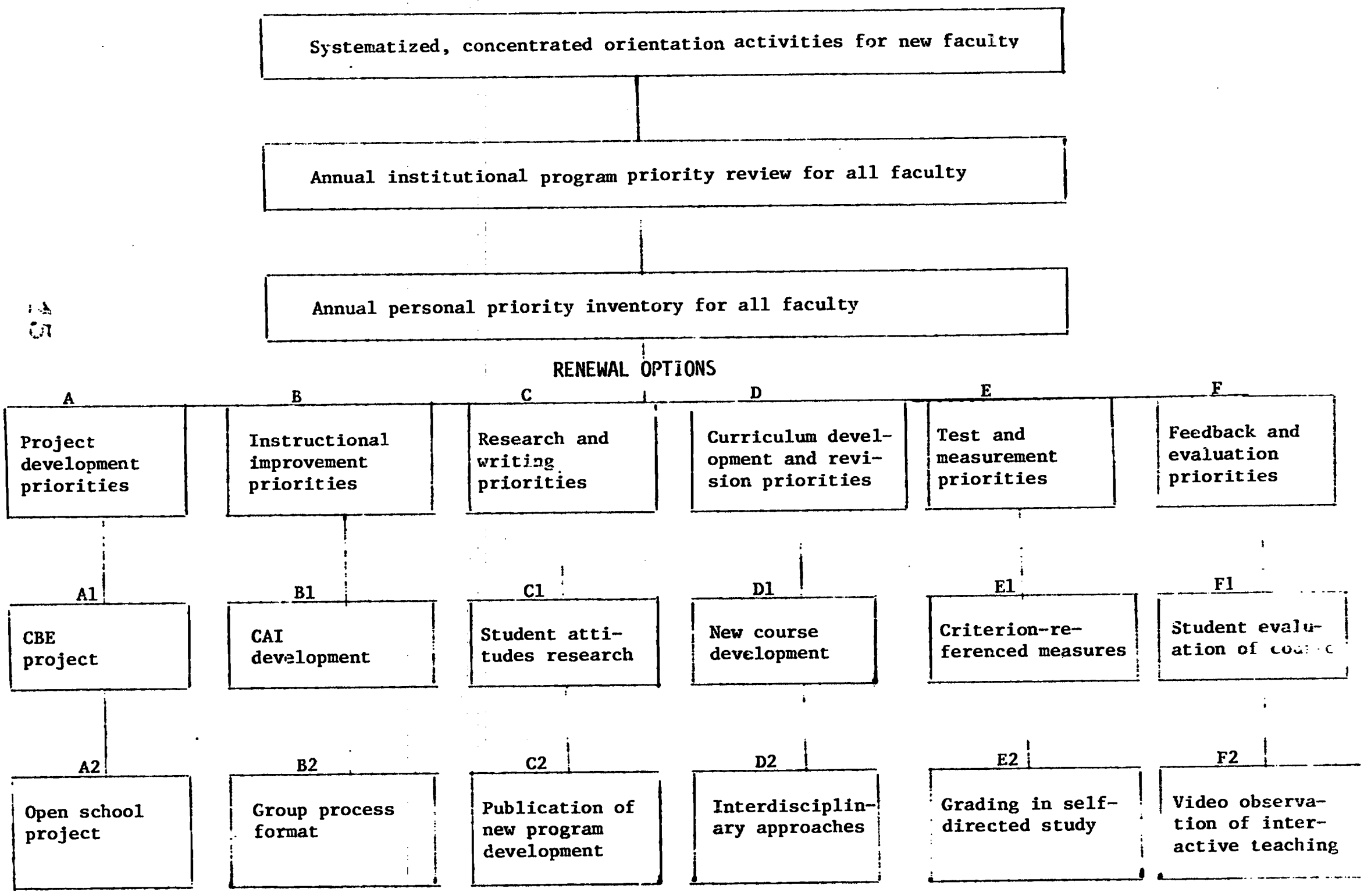
This model also includes those activities which have traditionally been regarded as the core of faculty renewal. They deserve a word here also. Sabbaticals, conference attendance, guest lectures, and single-quarter leaves cannot afford to be sacrificed if retrenched budgets come to "push-and-shove" decisions about whether faculty or faculty "fringes" must go. The benefits of the teacher educator maintaining a broad-based perspective should not be underestimated. The most salient feature of the college and university is its diversity of intellectual thought. The electricity within an intellectual climate is generated by that diversity. The stultifying effects of parochialism and habitualism can too often be observed in the constraining environment of many public school classrooms.

Obviously, it is necessary to go beyond both initial orientation and traditional approaches in examining promising practices in teacher educator training. The expanded model in Figure 2 illustrates more specifically some of the faculty renewal choices possible. It assumes that a great many of these renewal possibilities are as appropriate for the experienced teacher educator as they are for the doctoral student or the beginning professor. The six renewal areas are illustrative. Other priority areas such as college-school relationships, student advising, or the development of proposals for external funding could be substituted or included. Likewise, the six options provided in the illustration could be integrated or condensed in a variety of ways.

---

2. Musella, p. 199.

FIGURE 2
A MODEL FOR CONTINUING TEACHER EDUCATION RENEWAL



The intent here is not to suggest a lock-step structure for a faculty development program but rather to generate thinking in terms of how institutions of higher education might (a) more accurately and adequately assess the needs and interests of their faculty and (b) channel mutual and complementary interests into more collaborative task and support units within the faculty. The most economical and perhaps effective renewal strategy in any educational institution is one that maximizes the sharing of the rich resources of its faculty with one another.

A brief elaboration of how the elements of such an assessment or inventory model could identify areas for teacher educator training and lead to a better utilization of existing resources or development of necessary new ones may be helpful.

Certain teacher educators might have the design and development of new or modified training programs for teachers as a current priority. More specifically, their interest may be the development of a competency-based program. What might be appropriate training or renewal activities for such professors? Technical assistance might be needed in moving from courses to a modular format. Curriculum materials already developed, which could be used in a multiple-option instructional format, must be reviewed and placed in a centralized location. There are possible needs for new skill development in a move toward a format which stresses more goal setting and a closer advising relationship. What human and material resources exist to help them with these changes? What role modifications must be made so the teacher educator can spend more time on focused activities in school settings with students? Who can help establish the new working relationships needed with classroom teachers? A more systematic inventory of needs such as these is the first step in planning training and renewal activities in this area.

Other teacher educators may prefer to explore ways of altering their teaching rather than expending their efforts in broader program development. What are the possibilities of a computer-assisted format? Who might assist with video tape replay in a microteaching format or what personnel resources might contribute to a greater emphasis on a group process approach?

Still other staff members may wish to research some aspect of their program. Are they aware of other research efforts underway? Where can they go and who can they turn to with respect to assistance in design, methodology, and measurement problems? Conversely, are they aware of other programmatic, instructional, or curricular efforts in their institution or surrounding schools where their research or evaluation design might be welcome?

Whatever the current professional development activities of any teacher educator might be--curriculum review, testing, or student feedback, as well as the above examples--a similar set of questions designed to ascertain more specifically renewal and training needs and interests could be generated. More organized schemes are needed that inventory personal/professional interests and better match them with existing resources or those that can be obtained. No one format will accomplish this diverse task but several things could be done to facilitate it. The following list of recommendations speaks to this process and further elaborates on the model outlined earlier:

1. Periodic review of institutional priorities and as much explication of these as possible. Institutional priorities could be broken down into areas such as those illustrated in Figure 2 to accommodate better a match between current institutional and individual priorities.
2. A systematic inventory of both internal and external resources (such as those identified in this monograph) that might support each area of renewal. The specialized talents of every teacher educator in the institution should at some time be part of this pool of resources. The reality of limited budgets suggests collaborative and reciprocal renewal and training efforts whenever possible.
3. An emphasis by administrators and program developers or instructional designers on the identification and exploration of possible linkages between parallel individual and group interests. Obvious examples are incorporating research interests into program development or integrating efforts at curriculum revision with instructional support capabilities.
4. Too often formal committee structures do not reflect the priority interests of teacher educators. More effort could be made to assign to working committees staff who have a priority interest in and commitment to the problems addressed by the committee. Committee work assumes more of a renewal and training focus when annual inventories of personal priorities are used in deciding committee membership and outlining specific responsibilities.

INITIAL PREPARATION OF TEACHER EDUCATORS

A considerable portion of what might be considered initial training for the teacher educator is often the teaching, consultative, or administrative experience acquired while serving in one or more roles in the schools. Another important aspect of training for college teaching is the supervision with which he is provided during graduate studies. Minimal attention is given in this monograph to graduate studies training for two reasons. First, this is a relatively brief phase of a continuing training process. For most teacher educators this experience is sandwiched between numerous school assignments and continued career renewal activities at the college level. Second, however critical this brief training phase may be, few departments or schools of education provide much formal training for graduate students as future college teachers and teacher educators.

The University of Michigan Center for Research on Learning and Teaching (CRLT) is designed to provide institutional support for improving teaching and expanding new instructional arrangements. The Center puts out an excellent monthly newsletter devoted to this purpose, called *Memo to the Faculty*.[3] Such publications would be helpful on any campus, and even further sharing of innovative practices could be facilitated through an exchange of such newsletters among different campuses. Several CRLT memos have dealt with the training and utilization of graduate students. One survey of 20 schools

---

3. The University of Michigan, Center for Research on Learning and Teaching, Memo to the Faculty, Memo no. 21 (Ann Arbor: the Center, September 1967).

that produce 90 percent of the Ph.D.'s graduated each year yielded the following data which is summarized here:

1. There is little or no formal recruitment of people who desire a career in college teaching (or teacher education).
2. In less than a third of college programs is there any formal supervision of graduate students or teaching fellows or any time set aside for experienced faculty to engage in such activity.
3. The most common "training" formats, as reported by 89 percent of the correspondents in the study, were short meetings of all teacher fellows, mostly administrative in nature. Participation by faculty, let alone instruction, was largely incidental. The second most common training format was regularly scheduled courses as a means of information sharing.
4. In those colleges reporting *formal* training programs, four trends were noted:

   --Formal vehicles were provided for experienced teaching fellows to pass information on to beginners (64 per cent).
   --Professors planned class sessions with teaching fellows (50 per cent).
   --Personnel could be contacted to assist in test construction (33 per cent).
   --Specific assistance was provided in increasing subject matter competence (25 per cent).

PROTOTYPES

Certainly, such sketchy training reflects poorly on colleges in general and especially colleges responsible for teacher preparation. Little data exist on whether this situation generally has been improved since this survey. There is evidence, however, of some prototypic effort as reported by a few institutions. Michigan has, with the assistance of the Danforth Foundation, experimented with a three-level developmental training program. Level I is an apprenticeship period; Level II, a teaching fellow period in which eventual responsibility for teaching one's own course is assumed; and Level III is a graduate supervision period when one assumes responsibilities such as supervision for Level I students and the coordination with faculty for their input into training activities.

Koen, who was instrumental in organizing the Michigan program, poses the following analytical questions that are excellent points of departure for those initiating or attempting to improve their initial training practices:

1. What is the department's explicit policy statement concerning the role, status, responsibility and the rights and privileges of the teaching fellows?
2. Insofar as a given department is free to select only certain graduate students as its TFs, on what basis will this selection be made?
3. Who will supervise the TFs participating in the training program--faculty or senior teaching fellows or both? On what basis will these supervisors be selected? How will their participation be credited as a significant proportion of their "teaching load"?
4. What kind of reference materials are available for individual

reading and/or as a basis for group discussions?

5. What are considered to be the primary skills of an undergraduate teacher and how does the training program contribute to strengthening these skills?
6. What kinds of teaching and "learning management" techniques is the training program designed to develop (e.g., open classroom, grading options, use of buzz groups, simulation and role-playing, etc.)?
7. How does the reward system within the department recognize and support the teaching function of TFs and faculty in comparison, for example, with research activities?
8. By what intra-department mechanism will continuity be maintained? By what means can each new faculty coordinator or supervisor benefit from and build on what has been learned in the past year and the year before, etc.?
9. By what means will the program recognize the special needs of the individual TF?
10. What are the provisions within the program for facilitating greater autonomy and responsibility to the TF as he gains in experience?
11. What criteria will be used to assess the effectiveness of each TF? How will this information be obtained?
12. How does the department propose to utilize the other resources and units within the university relative to the preparation of the new college teacher?
13. What kind of evidence will be sought for evaluating the strengths and the weaknesses of the proposed training program?[4]

A second prototype for an initial training program is the Associate Instructor Teaching Skills Program (AITSP) at Indiana University. This project is directed by Kenneth Majer. AITSP is designed as a consultant group for any department in the university interested in developing initial teacher training skills. Two major training components are usually developed: a seminar strand and a teaching practicum.

Topics in the seminars include the writing of objectives, the designing of instructional formats, the lecture method, group discussions, laboratory teaching, new techniques, A-V resources, evaluation, testing, and the "first" class. *Getting Started: A Guide for Beginning College Instructors* serves as an organizer for several of the topics.[5]

The teaching practicum component is twofold. Part I provides a low-threat environment with an emphasis on practicing specific skills in a microteaching setting. Part II consists of videotaped observation and analysis of the associate instructors in their classrooms. Again, written materials on topics such as interpersonal communication skills have been

---

4. Frank Koen, in Memo to the Faculty (Ann Arbor: University of Michigan, Center for Research on Learning and Teaching, March 1973), p 5.

5. Susan Hawkins, and others, Getting Started: A Guide for Beginning College Instructors (Bloomington: Indiana University, 1974).

developed to assist in these improvements of teaching sessions.

Certainly, more formal programmatic effort is needed to enhance the training for teaching of the many Ph.D.'s who graduate annually. The majority of these professors, especially the teacher educators, will devote considerable time to teaching other adults, yet this is the very area where perhaps the least is done to assist them in that difficult task.

STAGES OF FACULTY DEVELOPMENT

This brief review of doctoral, transitional, and in-service training models provides some direction for the continuing development of the teacher educator. Analysis of professional growth patterns suggests possible readiness for different training at various stages of a career. Such assessment complements any training model. Toward this end, Ralph's efforts to conceptualize and validate stages of faculty development is worth noting. The following criteria for a developmental model as developed by Loevinger are assumed in his model:[6]

1. There is an invariable order of the stages.
2. No stage can be skipped.
3. Each stage is more complex than the preceding one.
4. Each stage is based upon the preceding and prepares for the succeeding one.

The model using these criteria was developed as an extension of ego development specifically as it relates to a professor's professional career. His development is analyzed in terms of how he views his life, his career, his teaching, his students and colleagues, and the nature of knowing and of knowledge. Protocols of open-ended interviews with faculty were examined to construct the model. Data from the interviews were used to order the faculty along a continuum according to the complexity of numerous assumptions which they held about what provided meaning in their professional lives. Those faculty who were interviewed were next sorted along this continuum into the five stages making up the developmental scheme.

The following excerpts are taken from descriptions of each of the five stages or levels of the model.

Ralph's Stages of Faculty Development

> Stage One. At this level the faulty member has a simple view of his role and the nature of his work. His professional reference group provides his role definition, and he enacts it in conventional fashion. Thus, in a large university he might see himself in terms of what is expected of a member of his academic discipline, while at a small college he might adopt local conventions. . . . His views of

---

6. J. Loevinger, Measuring Ego Development (San Francisco, Calif.: Jossey-Bass, 1970).

students, grading procedures, and the like are relatively undifferentiated. . . . His opinions are rather dogmatic and are distinguished by their lack of complexity. . . . (Sixteen percent of the sample were in Stage One.)

Stage Two. The professor in this stage has a more complex notion of his role than does his Stage One colleague. He may still define his role in relation to conventional reference groups but he demonstrates increasing distance from them. . . . His view of knowledge is gaining in complexity. Although his primary aim continues to be the acquisition of a specific knowledge base by students, this faculty member is interested in helpful techniques. . . . He still sees people in monolithic good and bad terms, but now he is willing to try to explain their behavior, usually in terms of simple causal relationships--for example, between behavior and social class or behavior and childhood experience. . . . (Twenty-one per cent of the sample were in Stage Two.)

Stage Three. The faculty member is further distant from reference-group definitions of his role. He has heightened consciousness of choice and is therefore aware of possible limitations of his freedom. He may display some anxiety as a result of trying to synthesize disparate elements in his role. This individual has considerable psychological insight into interpersonal relations. He can see students and colleagues in terms of inner motives and their relation to behavior. As an educator he seeks to create conditions in which students may learn, and he believes they learn primarily by active effort. . . . At this stage of his career, his philosophy of education may appear to be permissive. . . . Although he is more open to choice and diversity than are his less-developed compatriots, he has not yet integrated these elements. (Sixteen per cent of the sample were in this stage.)

Stage Four. The prototypic faculty member of Stage Four not only has a sense of freedom and relativity in social roles, he has evolved a personal style of functioning. He has mastered some role conflicts and has achieved partial synthesis. He is liberated from the excessive conscientiousness that at times characterizes the faculty member in Stage Three. He has a sense of reciprocity in human relations. . . . At this stage the professor can readily see things from the students' side. The permissiveness which sometimes appeared in Stage Three has been replaced by a slightly more structured view which still values the autonomy of the student. . . . Synthesis among diversity and complexity is stressed. (Twenty-one per cent of the sample were included here.)

Stage Five. At this stage the faculty member has a more clearly articulated position than does his colleague of Stage Four. For example, included in his philosophy of education is explicit concern with helping students develop a sense of values or character. Not only has he realized the reciprocity of Stage Four, he is able to find satisfaction in relationships with students of whom he may be critical. . . . The prototypic faculty member is able to accept contradiction and ambivalence in human functioning and irony in social processes and to

carry on effectively within such contexts. . . . (Individuals who reached this stage constitute 26 per cent of the sample.)[7]

While this model has yet to be rigorously tested, initial efforts at validation are promising. Regardless of what the final results demonstrate, attempts to identify more precisely teacher educator growth patterns are to be commended. Efforts such as this could begin to offer considerable guidance in terms of the types and degree of training appropriate for teacher educators at various stages of both their initial training and later career development. Ralph's data indicate that several faculty members passed through some of the early stages of his model as graduate and even undergraduate students. Further exploratory work in this area should provide more insights into the tensions and concerns in the difficult role of teacher educator.

TOWARDS IMPROVED TEACHING

THE NIE FOCUS ON TEACHING AND TEACHER EDUCATION

After nearly a year of preparatory effort, the Program on Teaching and Curriculum within the National Institute of Education sponsored a Planning Conference on Studies in Teaching in June 1974. The nearly one-hundred participants in this planning conference included practicing teachers, leaders in teachers' organizations, psychologists, sociologists, anthropologists, linguists, statisticians, and school and college administrators. Gage and McDaniels were prime movers in this effort. Organized into ten panels, the conference was aimed at the design of research and development plans for teaching and teacher education. "Conference" is in some respects a misnomer since the planning process is a continuing one, stressing public input and debate. After criticism and revision by practitioners and scholars in the field, the plans will be the basis for policy and budgeting for research and development in teaching and teacher education by NIE.

The major problems of practice occupied the attention of a number of working panels:

1. Teacher recruitment, selection, and retention;
2. Teacher training, performance, and effectiveness; and
3. Teacher utilization, i.e., the arrangement of the organizational and physical environment to improve the teacher's work.

To utilize the experience base of a relatively large supply of experienced researchers the conference was further broken down into five panels:

1. Teaching as human interaction,

---

7. Norbert Ralph, "Stages of Faculty Development," in Facilitating Faculty Development, New Directions for Higher Education, Vol. 1, no. 1 (San Francisco, Calif.: Jossey-Bass, Spring 1973), pp. 63-65.

2. Teaching as behavior analysis,
3. Teaching as skill performance,
4. Teaching as a linguistic process in different cultural settings, and
5. Teaching as clinical information processing.

Finally, three panels were organized to focus upon the methods and theory to be used in research on teaching and the personnel roles needed in the new instructional systems and alternative school patterns being developed.

The reports of the ten panels include approaches (overall strategies) and programs (tactics of research and development) in each of the problem areas identified. Some of the programs have been further delineated by illustrative research projects. These describe in some detail what must be done to obtain the kinds of knowledge or tools needed to make progress in the problem area.

As an illustration, the panel on teacher recruitment, selection, and retention, taking account of the present relatively large supply of teachers, focused much of their effort on strategies designed to improve the in-service training of teachers. Such training is currently impoverished of ideas and approaches as well as funds. A variety of new approaches such as mini-courses and teacher centers needs further development, evaluation, and dissemination. Also, further research is encouraged to improve the interviewing, testing, and records analysis procedures used in selecting new teachers and placing them most advantageously within the school systems.

The results of the conference are available from Dr. Gary L. McDaniels, Program on Teaching and Curriculum, National Institute of Education, Washington, D.C. 20208. They are intended to solicit reactions and provide further input into the research and development agenda. NIE invites "debate" of the plans as to their value in improving teaching, not only in the next few years but over the next several decades. Since the planning for the conference followed the planning models of the National Cancer Program and the National Heart and Lung Institute Program, NIE is also considering another feature of those models. Follow-up conferences may be designed to terminate efforts that turn out to be fruitless and to disseminate better those efforts which pay off.

Understanding of the teaching process has been advanced by the recent increased amount of research on teaching, especially that undertaken in the last two decades. Unfortunately, much of this research and much of the planned experimentation in teaching has not been incorporated into programs for training teachers. The study of teaching does not generally assume the major place it should in teacher education. Almost as rare as planned experimentation in teaching is continuing dialogue and cooperation between the teacher educator and the basic researcher of teaching.

This reference to the National Institute of Education's Conference on Teaching is included here for a twofold purpose: first, to encourage the teacher educator to familiarize himself better with the considerable research generated in the various teaching or teaching-related domains covered in the conference; and second, to encourage input into or at least familiarity with

the agenda for future research on teaching which NIE will establish as a result of this new process. More specific information on the conference and the evolving research agenda, as well as information on to whom and when different proposals for research on teaching or teaching education can be submitted to NIE, may be obtained by writing to Dr. McDaniels.

AN EXPANDED NOTION OF TEACHING

An excellent orientation to the various ways in which teaching can be conceptualized is provided by Joyce and Weil.[8] They have identified a variety of teaching models. They take the position that when teachers, or in this case, teacher educators, assume a certain frame of reference they are likely to emphasize certain types of learning outcomes and specific types of educational environments. When the educator demonstrates such an identifiable focus and can articulate his frame of reference in terms of a rationale for his choices, he meets their criteria for demonstrating a model of teaching. Other teachers could "model" someone who did this. The model is not meant to suggest a fixed pattern but rather is a guide for behavior. To demonstrate, let us take the example of the model builder.

The authors classify several teaching models into four major families that form the source of reality or frame of reference that all model builders have drawn upon. The four sources identified are the social interaction sources, the information processing sources, the personal sources, and the behavioral modification sources. The parallel with the NIE research format is obvious except for the emphasis on the personal sources. This frame of reference emphasizes concerns such as self-concept or self-image and more authentic and reality-oriented views of self and society. These four sources of teaching models are by no means mutually exclusive or antithetical. They can be helpful to any teacher educator in reexamining his own teaching style and the assumptions underlying that teaching. Models such as these can not only provide direction for the teacher educator in expanding or modifying his own teaching techniques, but assist those he teaches as well. A list of these teaching models, including their major proponent and the family to which Joyce and Weil have assigned them, is included in Table 1 to illustrate the variety of possible models that the teacher educator might further explore.

TEACHING MODELS--TEACHER EDUCATORS

Some pioneer work has been done to develop typologies or models specifically for the teacher educator. Mann and his colleagues at Michigan focused upon the different roles the professor can assume and the influence that these approaches have on different types of students.[9] These teacher role models are intended to enable the teacher educator to emphasize those

---

8. Bruce Joyce and Marsha Weil, Models of Teaching (Englewood Cliffs, N.J.: Prentice-Hall, 1972).

9. Richard D. Mann and others, The College Classroom, Conflict, Change and Learning (New York: John Wiley, 1970).

TABLE 1
JOYCE AND WEIL'S MODELS OF TEACHING AS CLASSIFIED
BY FAMILY AND MISSION

	Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
1.	Inductive Teaching Model	Hilda Taba	Information Processing	Primarily for development of inductive mental processes and academic reasoning or theory-building, but these capacities are useful for personal and social goals as well.
2.	Inquiry Training Model	Richard Suchman	Information Processing	
3.	Science Inquiry Model	Joseph J. Schwab (also much of the Curriculum Reform Movement; see Jerome Bruner The Process of Education for the rationale)	Information Processing	Designed to teach the research system of the discipline but also expected to have effects in other domains (i.e., sociological methods may be taught in order to increase social understanding and social problem-solving).
4.	Jurisprudential Teaching Model	Donald Oliver and James P. Shaver	Social Interaction	Designed primarily to teach the jurisprudential frame of reference as a way of processing information but also as a way of thinking about and resolving social issues.
5.	Concept Attainment Model	Jerome Bruner	Information Processing	Designed primarily to develop inductive reasoning.
6.	Developmental Model	J. Piaget, Irving Sigel, Edmund Sullivan	Information Processing	Designed to increase general intellectual development, especially logical reasoning, but can be applied to social and moral development as well. (See Kohlberg.)

	Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
7.	Advance Organizer Model	David Ausubel	Information Processing	Designed to increase the efficiency of information-processing capacities to meaningfully absorb and relate bodies of knowledge.
8.	Group Investigation Model	Herbert Thelen John Dewey	Social Interaction	Development of skills for participation in democratic social process through combined emphasis on interpersonal and social (group) skills and academic inquiry. Aspects of personal development are important outgrowths of this model.
9.	Social Inquiry Model	Byron Massialas Benjamin Cox	Social Interaction	Social problem-solving primarily through academic inquiry and local reasoning.
10.	Laboratory Method Model	National Training Laboratory (NTL) Bethel, Maine	Social Interaction	Development and interpersonal and group skills and, through this, personal awareness and flexibility.
11.	Non-Directive Teaching Model	Carl Rogers	Person	Emphasis on building capacity for self-instruction and through this, personal development in terms of self-understanding, self-discovery, and self-concept.
12.	Classroom Model	William Glasser	Person	Development of self-understanding and self-responsibility. This would have latent benefits to other kinds of functioning, i.e., social.

	Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
13.	Awareness Training Model	William Schutz Fritz Perls	Person	Increasing personal capacity for self-exploration and self-awareness. Much emphasis on development of interpersonal awareness and understanding.
14.	Synetics Model	William Gordon	Person	Personal development of creativity and creative problem-solving.
15.	Conceptual Systems Model	David E. Hunt	Person	Designed to increase personal complexity and flexibility. Matches environments to students.
16.	Operant Conditioning Model	B. F. Skinner	Behavior Modification	General applicability. A domain-free approach though probably most applicable to information-processing function.

Reproduced, with permission of the publisher, from Bruce Joyce and Marsha Weil, Models of Teaching (Englewood Cliff, N.J.: Prentice-Hall, 1972), pp. 11-13.

teaching behaviors most consonant with his classroom goals. Goals and intentions are not always reflected in teaching behavior.

A teacher educator may think he is more concerned with student problem solving than with expert opinion giving but find that his students view his behavior differently. He is seen more as expert than as facilitator and not as a socializing agent but rather as formal authority. The following example illustrates this: A teacher in the expert role may make a statement that he accepts as fact. A student may accept the statement as it is presented; however, another student in the same audience may completely miss the content of the statement. He retains only an affective impression of the instructor. His reaction is, "He has an interesting way of thinking about things." For him, the teacher is more of an ego ideal. Yet another student might question the statement as fact. If the teacher (especially on a repeated basis) rejects the student's position, the student might well perceive the teacher as formal authority. If the teacher does accept his differing opinion, he might see the teacher as primarily a facilitator. Mann's analysis illustrates how the teacher's role is defined by how the student perceives the teacher, and that perception can differ widely from student to student.

Mann's typology consists of six descriptive categories, portions of which are described below:

The Teacher as Expert. This aspect of the teacher role conjures up the disparity between teacher and student with respect to the knowledge, experience and wisdom which they can apply to the subject matter of the course. The teacher is the expert, at least within certain defined areas of knowledge. His presumed expertise underlies both his right to be there and the students' interest in taking the course.

The Teacher as Formal Authority. Viewed from the perspective of the larger social structure within which the college classroom is located, the teacher is an agent not only of instruction, but also of control and evaluation. He is responsible to a group of administrators and external agents who expect him to insure uniformity of standards and a justifiable evaluation system based on merit when he presents his set of grades at the end of the course.

The remaining four parts of the typology may be much smaller components than the first two for most teachers; however, in many cases, they can be important too.

The Teacher as Socializing Agent. . . . the students' goals typically reach far beyond a particular classroom or course. The teacher is usually a member of the community of scholars, accredited by a professional or academic discipline, and is also a member of an institution that may be highly relevant to a student's occupational aspirations. The teacher resembles in some sense a gatekeeper to a vocational world. He serves as a representative of his field, especially of the values, assumptions and style of intellectual life that characterize his discipline. Frequently, it is he who does not pass a student to the

next plateau or screening-process, or he may do so with varying degrees of support and pleasure.

The Teacher as Facilitator. There are times in the teacher-student relationship when the teacher seems much less absorbed with his own expertise, his power and his field than with the aspirations of the students. . . . By not assuming that he can specify what skills or goals they bring with them, he creates for himself the complex task of determining what individual students have come to do, what they seem able to do already, and what they might need help in doing better. . . . From this it follows that the typical activities of the teacher as facilitator may entail far more listening and questioning than lecturing and assigning.

The Teacher as Ego Ideal. [Students] . . . use their teacher in the continuous process of formulating and approaching their ideals. It may only be some of the students some of the time and the idealization may be limited to certain aspects of the teacher's total performance, but this process is an important part of the college classroom.

The Teacher as Person. The teacher as a person aims at engaging students in a mutually validating relationship. Ideally, both the student and teacher feel sufficient trust and freedom to share their ideas and personal reactions not only to the course material, but also to matters that may fall outside the usual definition of what is relevant in a classroom.[10]

The teacher educator's teaching is constantly modified by the reactions and participation of his students. A student classification scheme has been worked out that includes the compliant students, the anxious dependent students, the discouraged workers, the independent, the heroes, the snipers, the attention seekers, and the silent students as typologies. Conceptualization such as this suggests the diversity of roles a teacher educator can appropriately assume in light of not only his own goals but also the various student needs he must deal with. Analysis of typologies such as these can assist the teacher educator in developing a flexible and adaptable approach to teaching.

TOWARD DIVERSIFIED INSTRUCTIONAL FORMATS

THE KELLER PLAN

The most widely shared, recent development in college instruction is the Keller Plan. This instructional methodology, named after its major designer, is also commonly referred to as Personalized System of Instruction (PSI) and, with some modifications, as contingency-management instruc-

---

10. Richard I. Mann and others, Memo to the Faculty, memo no. 45 (Ann Arbor: University of Michigan, Center for Research on Learning and Teaching, August 1971), p. 2.

tion or self-paced supervised study. Keller initiated his concept of this instructional format in 1967. The features that most distinguish this instructional procedure from others include (a) flexible work at the student's own rate, (b) mastery units, (c) lecture-discussions as a motivational rather than prime informational vehicle, (d) increased reliance on written materials as a means of communication with the professor, and (e) the use of proctors who assume both a tutor/test role and a personal/social one. The handout that Keller provided students at the beginning of his introductory general psychology course describes the basic format in some detail:

> This is a course through which you may move from start to finish at your own pace. You will not be held back by other students or forced to go ahead until you are ready. At best, you may meet all the course requirements in less than one semester; at worst, you may not complete the job within that time. How fast you go is up to you.
>
> The work of this course will be divided into 30 units of content, which correspond roughly to a series of homework assignments and laboratory exercises. These units will come in a definite numerical order and you must show your mastery of each unit (by passing a "readiness" test or carrying out an experiment) before moving on to the next.
>
> A good share of your reading for this course may be done in the classroom at those times when no lectures, demonstrations or other activities are taking place. Your classroom, that is, will sometimes be a study hall.
>
> The lectures and demonstrations in this course will have a different relation to the rest of your work than is usually the rule. They will be provided only when you have demonstrated your readiness to appreciate them. No examination will be based upon them and you need not attend them if you do not wish. When a certain percentage of the class has reached a certain point in the course, a lecture or demonstration will be available at a stated time, but it will not be compulsory.
>
> The teaching staff of your course will include proctors, assistants and an instructor. A proctor is an undergraduate who has been chosen for his mastery of the course content and orientation, for his maturity of judgment, for his understanding of the special problems that confront you as a beginner, and for his willingness to assist. He will provide you with all your study materials except your textbooks. He will pass upon your readiness tests as satisfactory or unsatisfactory. His judgment will ordinarily be law, but if he is ever in serious doubt, he can appeal to the classroom assistant or even the instructor for a ruling. Failure to pass a test on the first try, the second, the third, or even later, will not be held against you. It is better you get too much testing than not enough, if your final success in the course is to be assured.
>
> Your work in the laboratory will be carried out under the direct supervision of a graduate laboratory assistant whose detailed duties

cannot be listed here. There will also be a graduate classroom assistant upon whom your proctor will depend for various course materials (assignments, study questions, special readings and so on), and who will keep up to date all progress records for course members. The classroom assistant will confer with the instructor daily, aid the proctors on occasion, and act in a variety of ways to further the smooth operation of the course machinery.

The instructor will have as his principal responsibilities: (a) the selection of all study material used in the course, (b) the organization and the mode of presenting this material, (c) the construction of tests and examinations, and (d) the final evaluation of each student's progress. It will also be his duty to provide lectures, demonstrations and discussion opportunities for all students who have earned the privilege, to act as a clearing-house for requests and complaints, and to arbitrate in any case of disagreement between students and proctors or assistants.

All students in the course are expected to take a final examination in which the entire term's work will be represented. With certain exceptions the examination will come at the same time for all students--at the end of the term. The examination will consist of questions which, in large part, you have already answered on your readiness tests. Twenty-five per cent of your course grade will be based on this examination; the remaining 75 per cent will be based on the number of units of reading and laboratory work that you have successfully completed during the term.[11]

The student is also provided with information regarding the options in terms of different times available for taking mastery tests, the minimal requirements for different grades, and details of his proctor's schedule and expectations.

This method has been widely researched, and extensive reviews of the literature provide results of a variety of outcome measures obtained in a number of subject matter areas where a PSI format has been utilized.[12] Among the more common findings are the following:

1. High student satisfaction (by those who complete the course); almost every study reports student preference for this method over lecture formats;

---

11. Fred S. Keller, "Good-bye Teacher," Journal of Applied Behavioral Analysis 1, no. 1 (Spring 1968): 80-81.

12. J. G. Sherman, Personalized System of Instruction Newsletter (Washington D.C.: Georgetown University, Psychology Department, March, 1974); Bruce A. Ryan, PSI, Keller's Personalized System of Instruction: An Appraisal (Washington, D.C.: American Psychological Association, 1974).

2. Self-reports of satisfaction and benefit by undergraduate proctors;
3. Higher dropout rates than in conventional courses and reports of more effort expended by those who do finish this course format;
4. Superiority to the lecture format in terms of student achievement and retention (in contrast to the results of earlier studies); and
5. Some evidence to support this format on a cost/effectiveness basis over more conventional formats.

Some of the more recent research focuses upon modifications in the design such as use of different reinforcers for achieving mastery levels or special reinforcement for reaching a given criterion by a specified time. The data on this design are promising, and there is little doubt that this format is effective if well planned and organized. Obviously this format, as is the case with any well-conceptualized programmed learning plan, requires considerable planning and effort. The ample investment of time for planning and organizing as well as the competency of proctors and professors are crucial to its success. More exploration of the type of training needed for teacher educators to implement this type of instructional format effectively and expeditiously is warranted.

DIRECTED STUDY

Directed study is an individualized on/off-campus learning experience negotiated between a student and faculty member. Considerable flexibility in the projects that students negotiate with teacher educators exists. Negotiations with students can take several forms:

1. The student chooses the amount of credit he or she wants to work for, and the instructor tries to adjust the project so the amount of work is appropriate;
2. The student chooses the amount of work and the instructor assigns the amount of credit; or
3. The student proposes both the amount of credit and the amount of work, and the instructor adjusts either or both as necessary.

The subject of directed study is included here because the number of independent projects that students engage in has increased dramatically since the late 1960s, especially at those institutions that facilitate such study, and this option, however appealing to students, demands considerable skill as well as time and effort by the teacher educator to ensure that quality learning takes place.

The Office for Special Learning Opportunities (OSLO) in the College of Liberal Arts at the University of Minnesota recently surveyed faculty working with students in directed study projects. The majority of faculty interviewed indicated that more effort per student is required to explore new directions and evaluate these projects equitably and fairly than is necessary in conventional formats. Many instructors in this survey suggested techniques that they thought were helpful in assisting students formulate proposals and evaluate their efforts. These comments were incorporated into a set of guidelines; some excerpts from OSLO's "Guidelines for New Instruction" are included below to assist teacher educators in dealing with a growing and deceptively difficult practice where little in the way of

formal guidelines has been generated.

> Independent study is a challenging educational mode for both instructor and student and it is good for both to weigh and understand the responsibilities and possibilities involved. . . .
>
> Are you the person for the job? Your interest is the student and what he/she wants to learn. . . . Be prepared to commit necessary time and energy to the task. . . . Say "yes" when you can, but don't be afraid to say "no" if you don't have the necessary time, skills, energy or willingness. . . .
>
> Your time and your role. Depending on the student and the project, you may have very little involvement or you may be called upon to become intensively involved. You may need only approve an already-worked-out proposal or you may need to provide extensive help, e.g., to stimulate the student's ideas, suggest resources, suggest directions at key phases and discuss findings, as well as evaluate the end product. . . . Whatever you decide about your time and your role, it helps the student to know clearly what your commitment involves. . . . If you feel ongoing regular meetings are important, decide on the number and make sure the student knows that you expect both of you will keep them. . . .
>
> The proposal. Learn what kind of background the student has in the field. . . . This information could be useful in helping shape a proposal and deciding whether the student has enough skill and prior knowledge. . . .
>
> Assess the student's motivation, intellectual maturity and self-discipline. . . . Encouraging the student to tell you of previous learning experience and past and present goals will probably help. Independent study is a unique opportunity for special guidance for a student which cannot be used advantageously by every student. You must decide whether this is a student who will benefit more from this type of endeavor than another.
>
> A major part of your job will probably be to help students to focus realistically on a manageable topic. You will probably want to help them establish a relatively fixed (but flexible) framework. . . .
>
> A written proposal. The student will be asked to file a proposal before departmental approval for a directed study project is given. How extensive the proposal is depends on you, the student and the project. Its purpose is to establish goals and means. . . . It can still allow for a great deal of flexibility if you wish it to. The Office of Special Learning Opportunities has developed an outline form to assist students in presenting a directed study or registration proposal. . . . Instructors are welcome to use it.
>
> Credits. Credits for independent study should be considered as equivalent to those in other forms of college level study. In the same way

that you negotiate with yourself and decide on the amount of time and effort and the scope of learning to demand from a student in a course, you need to negotiate with yourself and the student to decide what is worth how many credits in independent study. You may have other gauges you will want to use in addition to this one.

Multiple use of single learning experiences. The misuse of independent study registration has appeared in a few cases: a student's effort to make one piece of work serve under more than one course heading. . . . Sometimes extended and supplementary accreditation may be appropriate. The answer to a request for such a procedure need not always be negative, but the question should be explicitly addressed.

Suggestions from some of your colleagues. The work should be continuous. . . . The student may need a little encouragement to keep the work underway.

Keep a brief ongoing record of your meetings with the student as the project progresses and your evaluation of the work and interaction with the student. . . .

You may wish to innovate on the method in which the learning is demonstrated. For example, one professor has students keep an analytical journal of readings [which] requires the student to pose and answer questions and makes a good basis for ongoing discussions between instructor and student.[13]

Self-directed study needs some structure or frame of reference. The following contract was developed by Menges and used with one of his courses at the University of Illinois. It illustrates the type of negotiation for independent study many teacher educators are carrying on with their students within the framework of a class.

1. Attendance at five specified class meetings (purposes of orientation and evaluation of the course).
2. Submission of behavioral objectives describing the student's plan of work in the course.
3. At least three conversations with the instructor during the semester (to discuss progress toward objectives).
4. Submission of a journal of significant learning experiences.
5. Submission of a self-assigned course grade.[14]

There is need for more research in this area. Studies have consistently shown that content learning is at least equivalent in self-directed study courses to more conventional approaches, and student attitudes invariably

---

13. "Directed Study: How Instructors See It," Comment, no. 18 (Minneapolis: University of Minnesota, Center for Educational Development, June 1974).

14. Robert T. Menges, "Freedom To Learn: Self-directed Study in a Required Course," Journal of Teacher Education 23 (Spring 1972): 32.

favor these experimental deviations. Whether there is any relationship between this altered learning format and the student teacher's own teaching behavior when he subsequently works with his own students is one of the possible lines of inquiry the teacher educator might pursue.

THE STANFORD CATALOGUE OF TEACHER TRAINING PRODUCTS

The Stanford Center for Research and Development in Teaching (SCRDT) has as a primary objective the development of a prototypical teacher training system. SCRDT's Program on Teaching Effectiveness (PTE) has as a major focus the identification, description, and evaluation of the many teacher training products currently in existence. This screening process will help determine what products are most appropriate for inclusion into different teacher training systems.

Teacher training products are defined as those materials intended to equip teachers with skills or knowledge of "how to do." The products require that the trainee be active in the sense of performing, practicing, or testing out the skills to be acquired.

A catalogue of teacher training products has been developed by soliciting information on teacher training materials from more than 1,200 public and private universities and colleges, school districts, private research institutes, and federally sponsored research and development centers and laboratories. Existing catalogues such as ERIC's *Resources in Education*, the *Florida Center for Teacher Training Materials Catalog*, the *CEDaR Catalog*, *A Source Book of Elementary Curricula Programs and Projects*, and the *Westinghouse Learning Directory 70-71* and *72-73* were reviewed in developing this catalogue. The Stanford catalogue expands on the work of these other cataloguing efforts in two ways. First, any information on field tests of product effectiveness is included, and second, each product is cross-indexed by title, supplier, developer, and product objectives. The following types of descriptive information are provided on each teacher training product:

- --Product identification information, the complete product title, the developer's and supplier's name and address, and the sources of reference information.
- --The subject matter specificity of the product, ten subject matter categories, with an eleventh category for indicating that the product has no subject matter specificity.
- --The target audience, six role categories, such as "pre-service trainees," "in-service teachers," and "administrators."
- --Grade-level specificity, seven grade-level categories ranging from "early childhood" to "college teachers," with a category for "teachers in general."
- --Target outcomes for teachers resulting from training with the product, 11 planning skills, 25 presentation skills, 8 skills in the unplanned aspects of teacher behavior, 12 assessment and evaluation skills, 9 affective outcomes of teacher training, such as "attitudes towards teaching" and "teacher self-concept," and 9 "other skills" of teachers which did not fit into the foregoing categories.
- --Target outcomes for students, 5 cognitive and 11 social-emotional

student outcomes.

--Product availability information, information on when the product will be available and its price.

--The nature of the training situation, information about the materials provided with the product; materials and equipment to be provided by the product's user; the amount of time and number of people required to administer training with the product; the smallest and largest numbers of trainees that could use the product at one time; and the nature of the practice required during training (paper and pencil exercises, teaching students, etc.).

--Phase of teaching in which the specific skills learned in training would be used, three categories consisting of "prior to interaction with student," "during interaction with students," and "after interaction with students."

--References describing field test results.

--Additional descriptive or evaluative comments, as made by the analysts.[15]

Of the 765 teacher training products that satisfied the above definition of teacher training, 657 were described adequately enough to be included in the catalogue. From this pool there were 554 products for which developers could be identified; there were 265 different developers. The tables on page 27, excerpted from *Teacher Training Products: The State of the Field*, provide some picture of who is developing what for whom.[16] It is interesting to note that while universities are the largest producer of products, teacher educator training products are by far the smallest category in which materials have been developed.

A review of the 56 products listed as appropriate for the training of teacher educators suggests that the great majority of these products were developed primarily for teachers and not for teacher educators. The Stanford cataloguers further break down training products into four basic skill areas: planning skills, presentation skills, skills in the unplanned aspects of teacher behavior and assessment, and evaluation skills. This computerized catalogue of teacher training products provides a clear pictures of the types of teaching skills that developers have addressed. It allows the teacher educator to be more informed and to compare what currently exists in a number of specific areas. It can also assist him in better deciding where further research and development are still needed, both for himself and the teachers he teaches. The PTE staff at the Stanford Center are continuing to classify products in terms of the cognitive, social-emotional, and organizational domains of teaching behavior.

PROTOCOL MATERIALS

The development of protocol materials is an attempt to illustrate key

---

15. Stanford Center for Research and Development in Teaching, Teacher Training Products: The State of the Field, Research and Development Memo no. 116 (Stanford, Calif.: the Center, January 1974), pp. 7-8.

16. Teacher Training Products, pp. 12 and 15.

TABLE 2

SUPPORT CONTEXTS IN WHICH TEACHER TRAINING PRODUCTS ARE DEVELOPED

Support	N	%
Universities	352	53.6
R&D centers and laboratories	93	14.2
School systems	46	7.0
Private organizations	23	3.5
Unknown	143	21.8

TABLE 3

FREQUENCY AND PERCENTAGE OF PRODUCTS IN CATEGORY 7: TARGET AUDIENCE--ROLE[a]

Descriptor	N	%
Preservice teachers	597	90.9
In-service teachers	547	83.3
Administrators	69	10.5
Teacher aides	64	9.7
Supervisors	61	9.3
Teacher educators	56	8.5
Others	22	3.3

a. The descriptors in this category are not mutually exclusive.

concepts drawn from psychology, sociology, and philosophy in lifelike situations. The basic difference between protocol materials and training materials is that the former deal with theoretical or conceptual elements and the latter address methodological or skill components.

Organized efforts to develop protocol materials for teacher education were initiated in 1970 with the funding of 10 projects by the Bureau of Educational Personnel Development, a division of the U.S. Office of Education (BEPD has since become the National Center for the Improvement of Educational Systems.) Assistance to project directors is provided through the Leadership Training Institute chaired by B. Othanel Smith and Donald E. Orlosky at the University of South Florida. Since 1970, some projects have expired and others have been funded, but in any given year an average of approximately 12 projects have been active. By 1974, approximately 140 protocol products had been developed in the Protocol Materials Project. With the support of NCIES approximately nine training materials have also been produced at the National Center for the Development of Training Materials in Teacher Education at Indiana University.

A highly diverse number of concepts are represented in the protocol materials on video tape, 16-mm film, filmstrip, and audio cassette. A few examples selected from the Florida *Protocol Catalog* include stages of group growth, role expectations for teachers, symbolic elaboration, negative reinforcement, transitions, and "withitness."[17] Several basic concepts and principles usually dealt with in abstraction by the teacher educator may be more fully developed through the use of these instructional materials which are intended to illustrate key concepts in education better. The teacher educator might well enhance his instruction by both reviewing existing protocols and exploring various means for developing his own protocol materials.

COMPUTER ASSISTED INSTRUCTION AS AN AID IN THE TRAINING AND DEVELOPMENT OF TEACHER EDUCATORS

CATTS

A number of useful observation systems have been developed to provide teacher trainees with precise feedback about various dimensions of their teaching behavior. The effectiveness, however, of many of these analytic tools in an observation-coding-feedback training format is often severely constrained by the time-consuming and tedious analysis of the data recorded. Teacher educators in competency- or performance-based teacher education programs especially need to explore tools which will provide more immediate analysis and feedback in skill training sessions. Real-time computer technology, when incorporated into the training process, can resolve many of the current problems of delayed feedback.

A prototypical system has been developed at the Center for Innovation

---

17. Florida State Department of Education, Protocol Catalog; Materials for Teacher Education (Tallahassee: the Department, 1974).

in Teaching the Handicapped at Indiana University. Semmel has designed a computer-assisted teacher training system (CATTS) at the center's laboratory.[18] The CATTS scheme consists of three interdependent units, a teaching station, an observation-coding station, and an analysis encoding station.

A teaching station refers to classrooms with a feedback display device situated so it is unobtrusive to classroom activity. The computer-controlled feedback device, whether visual or auditory, is displayed in a manner whereby the teacher can receive instantaneous and continuing feedback. The feedback can be channeled through means of (a) closed circuit, televised images of a cathode-ray tube display (CRT), an external device which feeds back data by changing light patterns, or (b) an audio tape recorder triggered by the computer to provide prerecorded data relevant to specific classroom interaction.

The observation-coding station is the link between the classroom interaction and the computer analysis operation. The physical station may be the classroom itself, an observation booth, or a closed-circuit television hook-up. The trained observer categorizes his observations with whatever systematic observation tool he is using directly into a coding terminal. This terminal is usually a push-button operation similar to the touch-tone telephone with the buttons interfacing directly with the computer. Present computer programs allow not only the recording of categories and subcategories but interactions between teachers and specific children in the classroom.

The analysis-encoding station consists of a small computer and the associated hardware required for on-line processing of coded input data. In addition to processing input, the computer system controls the display devices in the teaching stations and also provides copy printout data through an integrated teleprinter for further postteaching analysis.

The computer system is not limited to the delivery of instantaneous feedback to trainees. CONCODE, a consensus coding system, has also been developed at the center. This system utilizes the computer to assist in training students to discriminate relevant teaching behaviors while reviewing video tapes that have been integrated into the system. It also provides a means for training reliable coders. When two or more coders record their categories on their touch-box encoding terminals and they do not agree, the computer will stop the video tape, record their differences, and freeze until the trainee coders resolve their differences or reach a consensus.

The future of systems such as CATTS in assisting the teacher educator may depend upon the outcome of longer-term controlled studies. In any skill development program, not only must effects on trainees, long- and short-term, be tested, but effects on pupil outcome measures must be evaluated as well. The preliminary results of research in this area of CAI are promising and it is a possibility that a cost-effective CATTS system can

---

18. Melvyn I. Semmel, Toward the Development of a Computer-Assisted Teacher Training System (Bloomington: Indiana University, Center for Innovation in Teaching the Handicapped, 1972).

be realized in the near future. Semmel underscores the need for more experimental research on teaching and skill acquisition that parallels and contributes to his current work:

> Actually, CATTS is just a kitten. Hence, many modifications have yet to be implemented through research and demonstration projects. Obviously, the most pertinent question is whether the system does in fact have the capability for developing and modifying specific teaching skills. It can be reported with a degree of confidence that the system eliminates the tedium of coding, summarizing, and analyzing data associated with traditional approaches to observation systems. As such, it has obvious advantages as a research tool. However, the efficacy of CATTS as a training system remains to be empirically demonstrated.[19]

INTEGRATED MEDIA

David has developed a different CAI prototype.[20] He used the computer to facilitate the utilization of two other media which have not been adequately experimented with by teacher educators--television and telephones. Experiments with hybrid systems such as this have been rare. David (as Director of the Data System Center for the Archdiocese of New York) began his experimentation in the late sixties. While the financial base for his efforts has been eroded, the results of this unique approach to instructional improvement were promising enough to include a review of this model here. The Catholic schools of the Diocese of Brooklyn, with the technical assistance of the International Business Machines Corporation, developed a new instructional system that used a computer to link educational television and the telephone, the rationale being that these media have as their objective the conveying of information and a large portion of the educational process shares this particular goal. As David explains:

> What was technologically involved in the experiment was the 2500MHZ closed-circuit Instructional TV of the Brooklyn Diocese, an IBM System/360 Model 40 computer at IBM's Advanced Systems Development Laboratory, and the New York Telephone Company's telephone lines between New York City and the laboratory 50 miles to the north. Educational telecasts and slides were broadcast over the Diocesan ITV system to the school participating in the experiment. The computer was used to control a voice response unit storing recorded messages. These could be selected by the computer and sent over the telephone lines to the various users of the system. Also, the computer controlled a special switching device in the ITV studios used to select slides to be broadcast over the air while companion voice messages were being received over the telephone. The terminal used in the school was the simple touch-tone

---

19. Semmel, p. 14.

20. Brother Austin David, "ITV, Telephone and Computer as an Instructional System: A Feasibility Study," AV Communication Review 21, no. 4 (Winter 1973): 453-65.

> telephone. This telephone is equipped with a small loudspeaker so that the user can put down the telephone receiver and be free to take notes on the information being given by the computer system. An ordinary TV set, tuned to the diocesan channels, rounded out the equipment used at the receiving center.[21]

David further explains that in addition to the video presentations developed for the system, additional material to be stored in the computer's voice response unit was prepared. This material was an expansion of the topics contained in the telecast. Thus, for each of the eight half-hour telecasts, there were approximately two hours of additional information stored in voice in the computer. Also, 800 slides related to the materials stored in the computer system were made. One hundred slides were needed for each TV segment's expanded information sequence.

The instructional system stressed a nondirective approach to learning but could also be used in a directive fashion if the user chose to follow the suggestions completely. After the teacher watched the videotaped presentation, he was free to go into the expanded lecture portion of the learning experience--a searching through of the additional information stored in the computer voice response system, or about two hours of information on each televised presentation. Voice messages amplifying topics covered in the lecture could be recalled for periods of half a minute to two and one-half minutes in length. Following each message, the student could select the next message from a number of alternative choices. The student-teacher was free to follow or to ignore these messages, and this is where the degree of autonomy was established. Each participant was allowed 20 to 25 minutes to search through the material. After this time period the computer was programmed to go automatically into a retest phase.

More experimental research and development would seem justified to explore the cost-effectiveness of prototypical systems such as this and more recent developmental efforts in CAI such as the TICCIT system (Time-shared, Interactive, Computer-Controlled, Information Television). The growing need for more involvement in continuing teacher education by the college-based teacher educator heightens the cost-effectiveness concern. Limited time and multiple demands have constrained the teacher educator in this direction. Computer-integrated systems such as those just outlined deserve further exploration as one means of instructional delivery for continuing teacher education. It is understandable that initial operating expenses have often precluded extensive exploration with CAI. There is no doubt, however, that the teacher educator must assume a more visible role in continuing education, and cost-effectiveness questions about models where individual teacher educators travel to single schools or individual teachers leave their colleges to come to campus are as equally appropriate as those about CAI. More experimentation with remote multimedia approaches to teachers in their school environments is a challenge the teacher educator of the seventies must respond to.

---

21. Brother Austin David, "Teacher Education through an Innovation of Modern Technology," NCEA Bulletin, May 1969, pp. 25-26.

EXTERNAL SUPPORT FOR THE TRAINING OF TEACHER EDUCATORS

THE DANFORTH FOUNDATION

The Danforth Foundation has a rich history of supporting reform and improvement within teacher education. Warren Bayer Martin, chairperson of the foundation's Committee on Higher Education, underscored this continuing commitment when he recently outlined future directions for the foundation.[22] "Teaching and Learning in a Democratic Society" is the theme around which the foundation's programs will be organized and the majority of its grants focused.

With respect to the teaching part of the theme, three areas are emphasized:

1. The preparation of new teachers,
2. The renewal of established professors, and
3. The future of the teaching profession.

Activities relating to new faculty preparation that show promise of tapping motivational and attitudinal resources in the candidates, as well as giving students help in mastering requisite skills, are a high priority for the foundation. The renewal of established professors is noted as a purpose of even greater urgency. Finally, the future of the teaching profession encompasses concerns such as academic freedom, job tenure, opportunities for women and ethnic minorities, and the relationship of liberal arts to professional career education.

The second aspect of the foundation's theme is learning. Learning is consistent with the foundation's history of helping learners who show evidence of leadership potential. The foundation's emphasis in learning will be focused upon the following:

1. Persons of leadership potential--whether men or women, from the ethnic majority or minority, younger or older;
2. Nontraditional ways to learn--field work, independent study, personalized instruction, growth contracts--plus provisions for lifelong learning; and
3. Cross-disciplinary learning within the traditional institutions.

The third dimension of the theme "Teaching and Learning in a Democratic Society" will be the hub of most of the foundation's efforts. The foundation assumes that education should affect all aspects of society. Activities that bring the teacher educator together with nonacademic professionals to confront better such issues as accountability, citizenship, and moral education will be stressed. The improvement of education through relationships with industry, the military, labor, and other social and health agencies will also be emphasized.

---

22. Warren Bryan Martin, "Teaching and Learning in a Democratic Society," Danforth News and Notes 10, no. 3 (May 1974): 1-6 [entire issue].

A major vehicle for much of the foundation's efforts will be the concept of "centering." A network of centers devoted to improving teaching and learning for teacher educators will be operationalized. These centers will be made up primarily of human resources. Martin identifies a number of functions that these centers might assume; his outline provides a stimulating list of suggestions for thinking about the continuing training of teacher educators.

Certain of the centers might be organized to focus attention on the needs and characteristics of specific types of institutions: community colleges, liberal arts colleges, urban universities, multi-campus university systems. The effects of organizational and environmental constraints on teaching and learning are important enough to merit specialization of this sort.

A center could be characterized by other work, i.e., graduate education reforms, the reconciliation of professional specialization with the themes of the liberal arts, the educational roles of non-academic professionals, the significance or place of professional societies in effecting curricular changes, the uses of field agencies and field work in improving teaching and learning.

It is possible to be even more specific about some of the tasks that are likely to be assumed by Danforth Centers. One center, for example, could concentrate on ways to improve the effectiveness of Teaching Assistants, guidance on course organization, the preparation of lectures, modes of grading and testing, the TA's relationship with senior staff faculty, student-TA interaction, and other matters of concern.

This same center, or another one, could look into ways to make skillful use of faculty emeriti. The rich experiences, the insights and reflections of senior faculty are resources for the improvement of teaching and learning.

One or more of the centers might concentrate on improving the uses made of faculty sabbaticals. Many faculty talk about research and writing while on sabbatical, but little comes of their good intentions. Often they are not disposed to research and are not likely to publish. But most of them want to be better teachers and would benefit from time at a center working on new or old courses, on fresh materials in their field, on the updating and refinement of skills, on becoming better professors.

Another concern today is academic advising. Most of it is bad enough to adversely affect the relationship between students and faculty, and to reduce the general effectiveness of teaching and learning. One of the centers might concentrate on this problem.

Faculty redundancy, as it is called, must also be faced. Large numbers of faculty are finding themselves unneeded, though often wanted, and there is urgent call now for sustained investigation into career reorientation possibilities and the effects of change. Academics in

increasing numbers must be helped to think about and, in some cases, make the transition to alternative professional careers.

Finally, the centers will act as "host," bringing together elements of the academic community with leaders from segments of the society-at-large to discuss the less definite but unquestionably important issues having to do with the future of the teaching profession, the values of education, and the place of institutions of higher learning in modern society.[23]

INTERNAL CONSULTING GROUPS AS A VEHICLE FOR TRAINING TEACHER EDUCATORS

MINNESOTA "FIELD-PLOT" MODEL

The University of Minnesota works with the Center for Research in Human Learning to assist a variety of units within the university. Its main purpose is developing and evaluating effective instructional programs. This model provides direction for the organization of specialized human resources, "to build bridges," as Burris states, "between the learning laboratory and the classroom."[24] These bridges or "field plots" demand that the subject matter specialist understand and appreciate the contribution of the basic researcher, program designer, and evaluation specialist in terms of issues such as sequence, instructional mode, and competency criteria. It also demands that these specialists, in turn, understand the structure and nature of the subject matter of the curriculum specialist.

Burris speaks to the problem that "this is not interdisciplinary research. Each participant has his own objectives within the total effort, and each individual must realize benefits relevant to his objectives in order to sustain interest in the problems of others."[25] Meaningful communication is essential, and the participants in these task-oriented groups work on developing an analytic discourse that facilitates this goal. This consultant group deals with such fundamental yet complex problems as the translation of institutional mission statements into specific curricular goals and activities. It explores the effectiveness of alternative instructional technologies within different subject matter for different students, and it examines the sequence in which material can be learned most effectively. The following are some of the long-term collaborative projects generated in different colleges by this consulting group at Minnesota:

1. Medicine: computer-based instructional simulations are used in hema-

---

23. Martin, Warren Bryan "Teaching and Learning in a Democratic Society," Danforth News and Notes 10, no. 3 (May 1974): p. 5.

24. Russel Burris, "The 'Field-Plot' Model for Instructional Research in Higher Education," Educational Psychologist 10, no. 3 (1973): 108.

25. Burris, p. 108.

tology, ophthalmology, family practice, and pediatric cardiology, and similar development is underway in anatomy and psychiatry;
2. Art history: self-paced slide-tape instructional units are being used and developed to teach survey courses in ancient, medieval, and Asian art history;
3. Law: a computer-based simulation is used in a civil procedure course, and other simulations are being developed by the law faculty;
4. Second language learning: computer-assisted instruction in German has now been expanded to Dutch, Swedish, Norwegian, and ancient Greek.

This type of internal consulting function seems a viable source of training skills especially for teacher educators. The resources for such a group are available within most larger colleges of education, and numerous organizational schemes could accommodate the organization of such a group. A matrix organization, for example, could allow several faculty to be jointly appointed to such a support group for varying lengths of time. Various combinations of curriculum experts, instructional systems designers, researchers on teaching, and media specialists could function as either short- or long-term support groups to the larger faculty.

THE WESTERN KENTUCKY MODEL

Western Kentucky University has designed a consulting group model for its College of Education.[26] Under the leadership of Dean J. T. Sandefur, the design for a Center for the Improvement of Teaching in Higher Education has been completed. The basic purpose of this center will be to assist teacher educators who are concerned about improving their teaching. College instructors will participate in the center's activities on a voluntary basis. The center will bring together a variety of specialized personnel resources to accomplish its mission and has tentatively identified the following positions to comprise the "support group":

1. A full-time *director* with upper-echelon administrative qualifications and special expertise in instructional improvement;
2. A (33% time) *research and evaluation specialist* responsible for structuring the assessment and evaluation plans and conducting treatment of data;
3. A (50% time) *substantive content specialist* with expertise in instructional improvement, especially the structure and organization of knowledge; his primary responsibility will be to help participants examine the substantive content and organization of their courses;
4. A (50% time) *human relations specialist* who has demonstrated competence in humanistic educational practices; and
5. A (50% time) *teaching strategist* who is a specialist in the development and use of various teaching strategies and combines this with a knowledge of effective media usage.

The latter three individuals make up a "remediation" team and will em-

---

26. J. T. Sandefur, "A Center for the Improvement of University Teaching" (Unpublished monograph, Western Kentucky University, 1974).

ploy a range of other consultants as needed. The center will be operationalized in a three phase process--assessment, remediation, and evaluation.

In the assessment phase, seminars will be held to assist the participating professor in analyzing how he wishes to distribute his teaching activities in terms of lectures, discussion, laboratory sessions, clinical activities, and directed projects. The remediation team together with the professor will analyze these plans and select areas for further development which the professor wishes to focus upon. Decisions will be made as to which data collection instruments and techniques will most effectively record his teaching style and reflect his objectives. Three pretreatment video tapes will be made and critically examined by both the team and the instructor. On the basis of this joint diagnosis, desired teaching strategies will be identified which he will experiment with during the remediation phase of this project.

During this remediation phase the professor will be relieved of some of his ongoing instructional responsibility to devote time to those activities selected for further development. He will be able to select from a variety of minicourses which focus upon activities such as role playing, the organization of independent learning, cognitive strategies, and group process protocols.

In the evaluative or posttreatment phase the professor will select a class in which he believes he can demonstrate his improved instructional techniques. Three posttreatment video tapes will be collected and compared with the pretreatment video tapes. A number of systematic observation and recording techniques will be used in this analysis. Student evaluation of the instruction will also be incorporated into the experiment using standardized measures. This faculty training process is summarized by Sandefur in Figure 3.[27]

COMPETENCY-BASED TEACHER EDUCATION: IMPLICATIONS FOR THE TRAINING OF TEACHER EDUCATORS

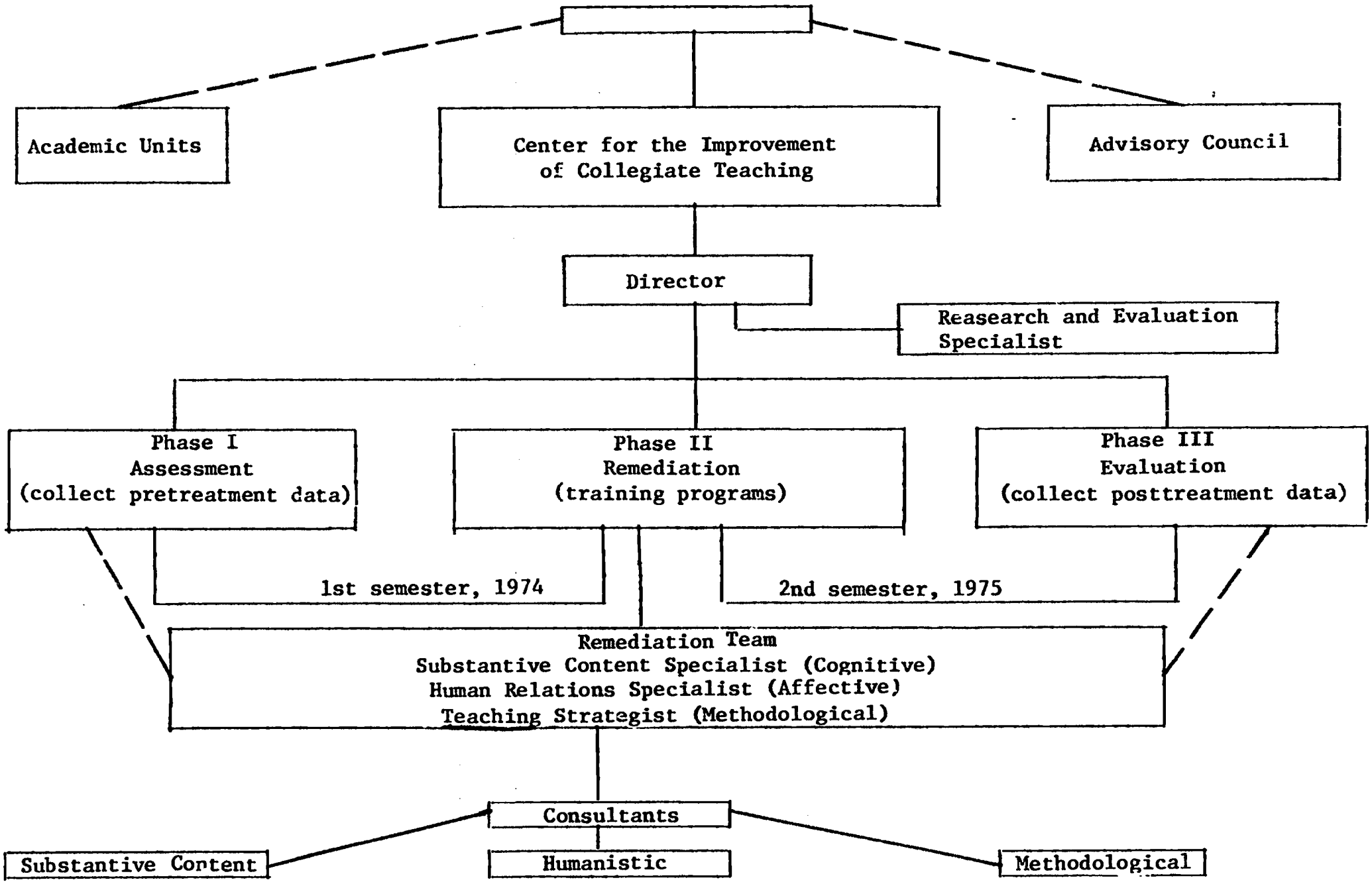
Competency-based teacher education continues to gain momentum as a concept. Legislation has been passed, at least enabling in nature, to promote CBE in the majority of states. This is not to suggest that there is not opposition to this multifaceted concept. First, there are some who see the advocates of CBE as selling tickets for a transcontinental flight before the biplane is perfected. Their concern emanates from the shopping lists of competencies that are increasingly being generated and that often reflect more slick rhetoric than empirical validity. Critics see too little concern for what effects the "latest" teaching skill actually have on pupil outcomes.

Second, classroom teachers and their organizations are acutely aware of the implications of this movement for teacher accountability. They are

---

27. Sandefur, p. 12.

FIGURE 3
WESTERN KENTUCKY SCHEMA OF THE CENTER FOR THE IMPROVEMENT OF COLLEGIATE TEACHING



justifiably concerned about what kind of accountability legislation may come down on them before all the facets of or preconditions for such a system are worked out. Just what people and what events in the ongoing schooling process should be held accountable for what aspects of learning? The California Beginning Teacher Evaluation Study reflects the complexity of this problem in its multidimensional and longitudinal approach to the study of teacher effects on pupil outcomes.[28]

Finally, there are those from the kindergarten teacher to the professor of humanities who question the degree to which a "competency" or "skill" approach begins to capture the essence of teaching. Skillfulness is important but this, they maintain, is not acquired by putting together isolated skills. The whole is much more than the sum of its parts.

This writer, while cognizant of these concerns, assumes the position that prototypical CBE models demonstrate considerable potential for reform and renewal in teacher education. First, regardless of the degree to which various teacher competencies are now validated, teacher educators must now move forward training designs that are as consonant as possible with what we do know about humane and effective principles of learning. The fragile flower of research on teaching obviously needs much greater cultivation, and research efforts that determine the effects of teacher competencies on learners should be an integral aspect of every training program. The question of how training practices can be improved is also a critical one, and to retard instructional development advances until the golden age of process-product validated competencies seems a step backward. CBE has made excellent contributions to instructional improvement.

Second, the competency-based movement embraces far more than a skill-based modular format. The CBE movement does address many of the issues of the seventies and, conceptually at least, assumes a very comprehensive approach to program reform. Elam describes many of the elements that define a comprehensive CBE program. Some of these elements he defines as implied or related and desirable. In a comprehensive CBE model, however, these elements are more interrelated than related. These "essential elements" of CBE are reviewed below to illustrate the comprehensiveness of this approach to teacher education and the multiple directions in which the training of teacher educators has been advanced:

Implied Characteristics

1. Instruction is individualized and personalized. . . .
2. The learning experience of the individual is guided by feedback. . . .
3. The program as a whole is systemic. . . .
4. The emphasis is on exit, not on entrance, requirements. . . .
5. Instruction is modularized. . . .

---

28. Virginia Koehler, "The California Beginning Teacher Evaluation Study," PBTE [The Multi-State Consortium on Performance-Based Teacher Education] 2, no. 9 (March 1974): 8-9.

6. The student is held accountable for performance, completing the program when, and only when, he demonstrates the competencies that have been identified as requisite for a particular professional role.

Related and Desirable Characteristics

1. The program is field-centered. . . .
2. There is a broad base for decision-making (including such programs as college/university faculty, students, and public school personnel). . . .
3. The materials and experiences provided to students focus upon concepts, skills, knowledges (usually in units called modules). . . which can be learned in a specific instructional setting. . . .
4. Both the teachers and the students (i.e., prospective teachers) are designers of the instructional system. . . .
5. . . . it is likely to have a research component; it is open and regenerative. . . .
6. Preparation for a professional role is viewed as continuing throughout the career of the professional. . . .
7. . . . instruction moves from mastery of specific techniques . . . [to] role integration.[29]

A brief elaboration upon some of these criteria will illustrate the multiple implications for modification or training in the teacher educator's role. These observations are based upon personal experiences in the development of CBE programs and observation of several other programs.

IMPLIED CHARACTERISTICS

Instruction is individualized, personalized, modularized

Observation of numerous CBE programs has underscored for this writer the crucialness of the expanded advising role that must be assumed by teacher educators. Since students usually engage in more extended and diverse forms of independent study, the *personal* review and evaluation of this work cannot be underestimated. The professor's personal supervision is a key motivational factor in the quantity and quality of work that the student undertakes independently. A parallel common feature of many CBE programs is frequent small-group seminars that become more feasible because of the reduced number of lectures in CBE. Students from several campuses, when asked what the best feature of their CBE program was, invariably responded, "more personal contact with the professor and the fact that he assisted on a project that was uniquely mine."

29. Stanley Elam, 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, December 1971), pp. 7-11.

The program is systemic

A dramatic difference between CBE programs and more traditional programs is the amount of time devoted to faculty planning together. Teacher educators in CBE are considerably aware of what is happening in modules or courses other than their own and alter their own instruction accordingly. There is the appearance of less redundancy and more integration of ideas from one instructor to the next.

RELATED AND DESIRABLE CHARACTERISTICS

The program is field centered

It is one thing to supervise a student teacher occasionally. It is quite another concept when the student teacher is assigned to the classroom for a short period of time to work on a focused assignment. Teacher educators must engage in considerable negotiation to place students in the classroom periodically from the beginning of their preservice program to practice specific skills. Teaching skills may begin as something listed in a paper module, but in the final analysis they are what a teacher educator, classroom teacher, and student translate into "real-world" teaching opportunities. The give and take between teacher and teacher educator make modular development and the selection and refinement of teaching skills a continuing process.

There is a broad base for decision making

It is one thing to rewrite a course syllabus. It is quite another endeavor to engage in that process students who have completed a module or course, teachers who have had those students in their classrooms, or even parents whose children were in those classes. Again, paper modules have multiple real-world implications, especially if one takes seriously the question of their effects on children. The lack of consistency in goals between college and schools, while bemoaned, usually results in little dialogue. When a teacher educator takes time to explicate his objectives, however, and then asks for reactions to those specific expectations in terms of what the student teacher does in the teacher's classroom, a new dynamic exchange often begins.

Instruction moves from mastery of specific techniques to role integration

Role integration is possible only if there is role analysis. Assumptions about what a teacher should look like are prevalent in teacher education and to some degree justified. They are not justified, however, if serious effort to analyze the teaching role first-hand is not demonstrated to test one's assumptions. This is especially important in light of the changing nature of schools and teaching roles. (The overview of Project Open that begins on page 41 elaborates on this point.)

These represent only some of the activities that serious developers of CBE have engaged in. Unnoted were efforts to provide students more options, allow students to progress at their own rate, or give students a

clearer idea of not only what is expected of them but also how they will be evaluated. These are basic principles of learning that are too often violated in teacher education, and many CBE programs have advanced training practices in these areas. It was stated that CBE, viewed in a broad perspective, has considerable *potential* for reform. Very few, if any, CBE programs embrace all the activities outlined above, and some, unfortunately, are little more than laundry lists of "paper" objectives. Yet, progress is being made and the promise of CBE will be realized if teacher educators can and will engage in some of the substantive role modifications suggested in the activities just outlined. The success of such teacher educator role modifications will foretell much about whether CBE fulfills its potential and, in fact, much about the future of college-based teacher educators.

ALTERNATIVE TEACHER EDUCATION PROGRAMS-- IMPLICATIONS FOR TRAINING THE TEACHER EDUCATOR

Just as there are substantive differences in the degree to which different CBE programs are actually competency based, there is also substantive variation in the types of teacher competencies emphasized. The growing number of alternative schools has resulted in more program variation in teacher education. There are more program attempts to prepare unique teachers for unique settings.

Currently, the most common alternative school setting is that of the open school. Granted that there are many types of open schools; there is also a core of characteristics that helps define this schooling process. Children are usually provided more autonomy and options; skill learning is more functional; and much of what is treated within separate subjects in other schools is integrated into a more project-oriented learning environment. The demands that such a school place not only upon teachers but also upon those who would educate the teacher are considerable.

PROJECT OPEN

In 1972, an alternative teacher preparation project, one of several at the University of Minnesota, was initiated to meet better the needs of teachers in open schools. Project Open was designed by this writer in collaboration with several colleagues and public school teachers. A major portion of one year was spent as a participant/observer in open schools. The plan was to utilize this time to identify better the unique type of skills needed to be effective in such an environment and to outline training activities that would accomodate those needs.

Extensive planning with experienced open-school teachers resulted in the following priority skill development areas for new open-school teachers:

1. Increased skill in diagnosing, in using tools to observe and collect data about children and their expanded instructional patterns more systematically;
2. Increased skill in setting goals with children, in designing and sustaining independent and small-group study, and in examining alternatives,

implications, and consequences of choices with children;
3. Increased skill in working with children, in processing behavior in a group, and in making decisions and solving problems collaboratively;
4. Increased skill in monitoring, record keeping, and sharing information on learners with others;
5. Increased skill in working in teaching teams of various kinds;
6. Increased skill in working with interdisciplinary curricular efforts; and
7. Increased skill in designing curriculum for children patterned after the language experience approach.

While several of these priority skill areas are reflected in many current teacher preparation programs, several others are not covered and others receive only superficial attention. The teacher educator must be prepared to turn to a number of sources if he wishes to develop program variations. Intensive involvement in actual school settings that are variant is a must. Extended collaboration with scholars from other disciplines must also be pursued. The attempt to understand better such processes as goal setting, collaborative learning by children, and more diverse learning spaces call for interaction with the behavioral analyst, the social scientist, and the environmental psychologist.

The faculty in the project determined that major modifications were necessary not only in the curriculum but in the instructional aspect of their own teaching as well. The following list of goals, developed by the faculty, calls for several modifications in instructional behavior:

1. That the faculty better "model" what it asks its students to demonstrate;
2. That faculty ensure that the student is exposed to "1,000 slices of schooling" before formal entry into the program; that for a concentrated period of time prior to fall quarter entry, he taste fully of the real world of education, from classrooms to school board meetings;
3. That more explicit performance expectations be developed by faculty for and with students;
4. That the student's learning be personalized and individualized as much as possible; that learning modules be developed that have multiple entry points, learning paths, and exit points; that modules or courses not be time bound;
5. That students have more formal opportunities to negotiate and choose with respect to their learning;
6. That the student be exposed to more interdisciplinary planning and teaching within the division (math-science) and between areas in the college (elementary social studies and sociological foundations); that more genuine dialogue and debate be openly demonstrated for and engaged in with students.
7. That one way students continually refine their teaching skills is by teaching their fellow students in an organized peer group that meets throughout their preservice program; that a group of ten students and one professor will meet weekly; that emphasis will be not only on general cognitive skills but on affective communicative skills;
8. That faculty involve students in the decision-making process of larger program decisions;
9. That advanced graduate students in counseling psychology be incorporated

as process observers into ongoing student/faculty instructional formats;

10. That more and better-coordinated laboratory/clinical experiences be incorporated into the program and that faculty monitor these experiences; and
11. That continued close affiliation with one professor be built into the project and that he and his students meet regularly in an informal setting to serve as a support group to individual students throughout their program.

This project has a definite affective and social emphasis. Not all teacher educators could be comfortable or successful in such a model. Alternatives for faculty are just as necessary as alternatives for students. The training for teacher educators to assume modified roles is facilitated when a program or project such as this reflects the interests of the faculty involved. A climate for faculty growth and training exists when teacher educators with similar interests are provided support to test out their ideas together in new program development. The expanded faculty involvement with students in this project was facilitated by institutional support and collegial reinforcement. New formats were tested because there was a collective sharing of ideas and a commitment to similar principles.

THE MATRIX ORGANIZATION

Colleges of education present a variety of organizational formats, and, invariably, there is some complexity to these organizational bureaucratic structures. As is the danger in any bureaucracy, both programmatic design and staffing patterns can become rigidified in teacher education. Collaborative program development and systematic faculty renewal as outlined in this monograph do not come about easily.

The matrix structures have been adopted by a number of large bureaucratic organizations such as the National Aeronautic and Space Administration's Goddard Space Flight Center. This matrix design can be an appropriate model for colleges of teacher education where programmatic development and faculty renewal have been suppressed by a "locked-in" organizational configuration.

The matrix organization is characterized by the division of an institution's responsibilities into two classes or dimensions with the purpose of increasing coordination among major units in that institution. Different divisions of responsibility exist in each dimension, such as research and scholarship in disciplines in one dimension and the training of personnel in the other. Coordination is achieved by having employees, in this case teacher educators, assigned to administrators of two (or more) major units, one in each dimension of the matrix. Usually the employee reports to one unit director administratively for policy and promotion but to the other or both for substantive task-oriented endeavors. The assignment to programs or projects in the second dimension is temporary. One is assigned to a project for a limited number of months or years, perhaps until project objectives have been pilot tested. For example, a researcher in the Department of Educational Psychology could be "matrixed" to assist in the design of an alternative project in the Department of Elementary Teacher Education

until it was operationalized and field tested. He is still responsible to the chairperson of the Department of Educational Psychology for salary and promotion, and he is expected to contribute to his own departmental policy making and program efforts. However, he is also jointly appointed, with appropriate budget reallocations, to the elementary training project. He could, in fact, be part of two or three other programmatic efforts demanding different expertise from different disciplines.

Obviously, these joint appointments are negotiable. They are a vehicle to bring together personnel with different expertise but similar goals for varying lengths of time to engage in program renewal and project development. Figure 4 illustrates a rather obvious example of how the matrix scheme might look in teacher education institutions. The directors along one dimension (A) of the matrix are heads of departments that have an emphasis on research and scholarship in curriculum areas; the directors along the second dimension (B) are responsible for training programs that cut across these disciplines.

In this type of organizational structure there could well be no single or permanent elementary certification program. Rather, there would be a variety of training projects and programs operationalized for varying lengths of time to bring together different types of teacher educators. These programs would vary to reflect the ever-changing needs in schools and would be modified on the basis of the data collected in each of these alternative projects. Programmatic decisions would be made more frequently by teacher educators about what should be included in the curriculum, how it should be taught, by whom, when, under what conditions, and for how long. Faculty would assume a much greater role in program design and development than currently is the case.

Major questions can be raised about whether the current situation of most teacher educators accommodates this structure. This is especially true when program design is not a priority for many teacher educators and few of these professionals have either the technical skills themselves or the time and support necessary to engage in the development of more sophisticated instructional operations. The need for more regenerative programs and faculty renewal, however, cannot be denied, and this type of organizational design should be explored. The utilization of consulting groups or the development of faculty support centers as described earlier would certainly contribute to the successful implementation of such an organizational scheme.

Program Development Specialists

The design ability of the unit managers responsible for the training dimensions of the matrix would be an especially critical factor in the success of such an operation. The design, development, and continuing renewal of programs in which professional personnel are trained is a difficult and complex process. Components of this design and development process include the pervasive organizational concerns relating to time, space, materials, curriculum, instructional delivery, and personnel. The process also demands knowledge and skill in areas such as instructional decision making, communications systems, human relations, change strategies, networking, computer management, and informational systems. It is debatable

FIGURE 4
MATRIX ORGANIZATION

Dimension B--Certification programs
(elementary education, secondary education,
school administration, school counseling)

Dimension A--
Disciplines
(educational psychology, educational sociology, mathematics, physical sciences)

	Unit director	Unit director	Unit director	Unit director
Unit director				
Unit director				
Unit director				
Unit director				

whether any person could incorporate such a range of skills into one role, but there is no argument that more skilled program and staff developers are needed in teacher education.

Most larger graduate schools have separate programs in curriculum theory, instructional design, organizational development, and measurement and evaluation. Perhaps more integrated graduate programs combining elements of each of these disciplines should be explored. Teacher educators could then be trained who would have a broader-based and more sophisticated design and development capability. A large variety of personnel now contribute to renewal efforts. Rarely, however, is there a highly skilled person coordinating those efforts. The lack of trained and competent spear carriers such as this may, as much as anything, speak to the lack of coordinated change and development at all levels of the schooling process.

FACULTY TEAMING

It was suggested earlier that one of the problems in teacher education is the lack of effective coordination of personnel. Professors with diverse specialities often have little experience in working together. There has been some attempt recently to address this problem through the development of training materials. Under the direction of Gene Hall, a workshop has been developed to assist teacher educators in working together more effectively.[30] The materials were developed primarily to contribute to the larger design of the Personalized Teacher Education (PTE) program which has been articulated over the last fifteen years at the center. This larger integrated training system concentrates the professional training of teachers into two full-time semesters. It integrates the contributions of faculty from a variety of disciplines into an instructional format that is heavily field based. Two of the most unique features of PTE are the integration of counseling psychologists into the program and a developmental model of students' concerns that undergirds the program.

The counselor works closely with the curriculum faculty in providing feedback both to students and to faculty about students. The counselor contributes unique insights based upon a battery of five personality measures developed at the center and videotaped microsessions with the students. This process is intended to ensure a greater awareness of students' needs and concerns, both personal and professional.

The developmental concerns model has evolved primarily from the work of Fuller.[31] It is an attempt to make the sequence of learning events in a training program as consonant as possible with the concerns of the students

---

30. Gene E. Hall and others, A Workshop for Interdisciplinary Faculty Teaming (Austin: University of Texas, Research and Development Center for Teacher Education, 1973).

31. Frances F. Fuller, Personalized Education for Teachers (Austin: University of Texas, Research and Development Center for Teacher Education, July 1970).

or what it is that is paramount to the students' efforts at any given time. Her research has resulted in planning teacher education activities in a developmental sequence. Appropriate activities are planned for students in terms of where they are in a developmental concerns model. These concerns are ordered and focus first on oneself, then on oneself as teacher, and finally, on the pupils one teaches.

These two dimensions of the PTE program are briefly outlined in conjunction with the faculty team training materials because they also have implications for the training of teacher educators. Feedback is a crucial component of any teacher training program, yet most feedback has been limited almost exclusively to teaching performance only and is concentrated on the terminal phase of the education student's training. The research and development done at Texas provides direction not only in terms of an initial and continuing feedback model but also in terms of one that deals with the students' personal, psychological, and phenomenological world as well. The concerns model has implications for the sequence of training activities. Considerable work has been done in varying the learning modality in terms of peer, micro, simulated, and clinical settings, but little has been done to examine the appropriateness of the sequence of learning activities either within a course or between courses in a training program.

The faculty team training materials focus not only on programmatic concerns but on personal concerns as well. Fuller's model was utilized in designing the training materials that are sequenced to address self-concerns, then task concerns, and finally impact concerns. Among the topics covered in the workshop are team functioning, team building, procedures for meetings, problem solving, team agreements, and resource identification and allocation. While the training format was designed for the PTE program, the skill building exercises are generalizable to most teaming situations.

The training of teacher educators, as stated earlier, should often be a collaborative and reciprocal endeavor. Reallocation of personnel may well be as crucial as the retraining of personnel. Team teaching in the public schools has failed to realize its true potential. This is understandable when one considers the lack of substantive differentiation in the teachers brought together. Not only are many teachers too similar to engage effectively in division of labor but they rarely have the necessary support in terms of time, leadership, and the skills of working together either. The teaming of teacher educators starts with a greater diversification of skills and the potential for a greater whole than each of its parts. This diversity, however, demands that there be even more skill in leadership, communication, and collaboration. Training in this area should be a priority, or "teaming" for teacher educators will resemble the superficial reorganization so often reflected in team teaching in the schools.

CONCLUDING THOUGHTS AND RECOMMENDATIONS

The training and renewal needs of teacher educators vary considerably. Many teacher educators exemplify the spirit of self-renewal, others border on self-preservation. Some are in positions that are designed to create

change; others are in roles that reflect necessary anchors of stability. The mission and priority goals of the institutions in which teacher educators toil vary in both emphasis and direction. There are certain conditions, however, that either enhance or constrain against a spirit and climate of renewal. Perhaps college students leave an institution with the spirit that its faculty reflects more than with anything else. The following suggestions are made with the hope of contributing to a sense of excitement and a commitment to exploration for teacher educators in their daily endeavors:

1. *Extended commitment by the experienced teacher educator to improve the graduate training of the future teacher educator.* More emphasis on improving specific teaching techniques and more shared teaching could contribute to the growth of both of these parties. Formal guidelines for the instructional support and training of the teacher educator-in-training should be developed, and experienced faculty should meet on a regular basis for specific training purposes with these graduate students.
2. *More systematic effort to assess the priority needs and interests of faculty.* Concurrent with this assessment, there should be a clear explication of institutional goals in programmatic terms. There must be more attention to the match of individual interests with institutional goals. Fewer committees and more action-oriented task forces that reflect the interests of faculty would be a positive step in this direction.
3. *Greater commitment to the development and coordination of faculty support personnel.* The development of graduate programs to train program and staff development specialists who could provide more programmatic leadership is crucial. More personnel who could provide technological assistance, media support, and materials development are also needed. The degree to which a college's instructional delivery can be extended as effectively by increasing these types of positions as opposed to just expanding the number of instructors should be better tested.
4. *Exploration of organizational schemes that facilitate teacher educators from diverse units working together on parallel concerns.* More systematic attention is needed not only on how to coordinate personnel better within the college but on how to integrate more effectively several types of people from outside of the college into it.
5. *Exploration of arrangements for personnel exchanges on a continuing basis.* These might be arranged with government, industry, and other social service agencies as well as with schools. The majority of the teacher education faculty might be placed on a rotating schedule of short-term joint appointments. Single-quarter exchange programs between teacher educators and teachers should be encouraged. Colleges and school systems together should explore the development and support of teacher centers that can serve such a linkage function. The sharing of mutual facilities by curriculum specialists in the schools with curriculum specialists in the college might be incorporated into such a center design.
6. *Exploration of organizational structures that foster collaborative writing and research.* More research effort has to be turned inward

to focus upon institutional and programmatic priorities. Current reward systems need careful scrutiny to examine the quality as well as the quantity of publication and to encourage more collaboration between those having instructional priorities with those having research and development priorities.

7. *Exploration of rotating qualified teacher educators to short-term tenure on support groups or consulting groups designed to assist their colleagues.* The internal consulting group concept may be feasible if existing faculty are periodically employed in this capacity. Such an assignment could allow personal research and development interests to be incorporated into these temporary assignments.
8. *At least one experimental study of some type negotiated annually between a teacher educator and his unit administrator.* This is not intended as a "research or else" strategy. Rather, it should encourage at least one time each year that the teacher educator can seriously reexamine his own priorities for scholarly inquiry and his administrator can provide feedback on possible support and parallel interests within the larger faculty. Scholarly inquiry can encompass a wide range of activities from a comprehensive research project to the testing of a new teaching strategy in a course; whatever the activity, some line of exploration should be discussed annually.
9. *Exploration of how preservice students of teaching can be more integrally involved in institutional renewal.* Students are able to work with instructors on curriculum revision, experiments in teaching, evaluation of programs, and the improvement of instruction. More effort should be given to involving students in educational problem solving within their *own* institution and providing them with credit for such efforts.
10. *Reserving at least five days during every school year for faculty to share with one another what they are doing of an experimental or innovative nature.* Teacher educators should have planned sharing sessions with their colleagues at least once every 10 weeks, and students should be welcome to select from any one of a number of seminar-sized sharing sessions that would be conducted during those times.

BIBLIOGRAPHY

Burris, Russell. "The 'Field-Plot' Model for Instructional Research in Higher Education." Educational Psychologist 10, no. 3 (1973): 107-11.

Bierly, Margaret, and others. Teacher Training Products: The State of the Field. Research and Development Memorandum no. 116. Stanford, Calif.: Stanford Center for Research and Development in Teaching, January 1974. 92 pp. ED 087 778. MF & HC.

David, Brother Austin. "ITV, Telephone and Computer as an Instructional System: A Feasibility Study." AV Communication Review 21, no. 4 (Winter 1973): 453-65.

---. "Teacher Education through an Innovation of Modern Technology." NCEA Bulletin, May 1969, pp. 27-29.

"Directed Study: How Instructors See It." Comment [University of Minnesota, Center for Educational Development], no. 18 (June 1974).

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, December 1971. 36 pp. ED 058 166. Publisher's Price: $2.00.

Florida State Department of Education, Protocol Catalog; Materials for Teacher Education. Rev. ed. Tallahassee: the Department, 1974. 30 pp. ED 090 215. MF & HC.

Fuller, Frances. Personalized Education for Teachers. Austin: University of Texas, Research and Development Center for Teacher Education, July 1970.

Hall, Gene E., and others. A Workshop for Interdisciplinary Faculty Teaming. Austin: University of Texas, Research and Development Center for Teacher Education, 1973.

Hawkins, Susan, and others. Getting Started: A Guide for Beginning College Instructors. Bloomington: Indiana University, 1974.

Joyce, Bruce, and Marsha Weil. Models of Teaching. Englewood Cliffs, N.J.: Prentice-Hall, 1972.

Keller, Fred S. "Goodbye Teacher . . . " Journal of Applied Behavioral Analysis 1, no. 1 (Spring 1968): 79-89.

Koehler, Virginia. "The California Beginning Teacher Evaluation Study." PBTE [The Multi-State Consortium on Performance-Based Teacher Education], 2, no. 9 (March 1974): 8-9.

Koen, Frank. Memo to the Faculty. Memo no. 51. Ann Arbor: University of Michigan, Center for Research on Learning and Teaching, March 1973.

Loevinger, J. Measuring Ego Development. San Francisco: Jossey-Bass, 1970.

Mann, Richard D., and others. The College Classroom: Conflict, Change, and Learning. New York: John Wiley, 1970.

Martin, Warren B. "Teaching and Learning in a Democratic Society." Danforth News and Notes 10, no. 3 (May 1974: 1-6 [entire issue]).

Menges, Robert T. "Freedom To Learn: Self-directed Study in a Required Course." Journal of Teacher Education 23 (Spring 1972): 32-39.

Musella, Donald. "A Model for Improving College Teaching." Improving College and University Teaching 19, no. 3 (Summer 1971): 198-200.

Ralph, Norbert. "Stages of Faculty Development." In Facilitating Faculty Development. New Directions for Higher Education, vol. 1, no. 1. San Francisco, Calif.: Jossey-Bass, Spring 1973.

Ryan, Bruce A. PSI, Keller's Personalized System of Instruction: An Appraisal. Washington, D.C.: American Psychological Association, 1974.

Sandefur, J. T. "A Center for the Improvement of University Teaching." Unpublished monograph. Bowling Green: Western Kentucky University, 1974.

Semmel, Melvyn I. Toward the Development of a Computer-Assisted Teacher Training System. Technical Report 7.2. Bloomington: Indiana University, Center for Innovation in Teaching the Handicapped, 1972.

Sherman, J. G. Personalized System of Instruction Newsletter. Washington, D.C.: Georgetown University, Psychology Department, March 1974.

University of Michigan, Center for Research on Learning and Teaching. Memo to the Faculty. Memo no. 21. Ann Arbor: the Center, September 1967.

ABOUT ERIC

The Educational Resources Information Center (ERIC) forms a nationwide information system designed to serve and advance American education. It was established by the U.S. Office of Education and is now administered by the National Institute of Education. Its basic objective is to provide ideas and information on significant current documents (e.g., research reports, articles, theoretical papers, program descriptions, published and unpublished conference papers, newsletters, and curriculum guides or studies) and to publicize the availability of such documents. Central ERIC is the term given to the function of the National Institute of Education, which provides policy, coordination, training funds, and general services to the clearinghouses in the information system. Each clearinghouse focuses its activities on a separate subject-matter area; acquires, evaluates, abstracts, and indexes documents; processes many significant documents into the ERIC system; and publicizes available ideas and information to the education community through its own publications, those of Central ERIC, and other educational media.

TEACHER EDUCATION AND ERIC

The ERIC Clearinghouse on Teacher Education, established June 20, 1968, is sponsored by three professional groups--the American Association of Colleges for Teacher Education (fiscal agent); the Association of Teacher Educators; and Instruction and Professional Development, National Education Association. It is located at One Dupont Circle, Washington, D.C. 20036.

SCOPE OF CLEARINGHOUSE ACTIVITIES

Users of this guide are encouraged to send to the ERIC Clearinghouse on Teacher Education documents related to its scope, a statement of which follows:

> *The Clearinghouse is responsible for research reports, curriculum descriptions, theoretical papers, addresses, and other materials relative to the preparation of school personnel (nursery, elementary, secondary, and supporting school personnel); the preparation and development of teacher educators; and the profession of teaching. The scope includes the preparation and continuing development of all instructional personnel, their functions and roles. As of March 1973 the Clearinghouse has also been responsible for selected aspects of health, physical education, and recreation. While the major interest of the Clearinghouse is activities in the U.S., it also is interested in international aspects of these fields.*

The scope also guides the Clearinghouse's Advisory and Policy Council and staff in decision making relative to the commissioning of monographs, bibliographies, and directories. The scope is a flexible guide in the idea and information needs of those concerned with the pre- and in-service preparation of school personnel; the profession of teaching; and health, physical education, and recreation.

ERIC DOCUMENT REPRODUCTION SERVICE

COMPUTER MICROFILM INTERNATIONAL, CORP. (CMIC)

P.O. BOX 190 ARLINGTON, VIRGINIA 22210

ORDER FORM

BILL TO: ______________________ **SHIP TO:** ______________________

ED NUMBER	NO. OF COPIES		UNIT PRICE	TOTAL
	MF	HC		

☐ PREPAID

TAX EXEMPT NO. ______________

ACCOUNT NO. ______________

SUB TOTAL	
SALES TAX	
POSTAGE	
TOTAL	

IMPORTANT INSTRUCTIONS

- **ORDER BY ED NO.** (6 DIGITS)
  See *Research in Education*
- **SPECIFY EITHER:**
  Microfiche (MF)
  or
  Paper Copy (HC)
- **ENTER UNIT PRICE**
  Include Postage
  (See Reverse Side)
- **ENCLOSE CHECK OR MONEY ORDER**
- **MAIL TO:**
  EDRS
  P.O. Box 190
  Arlington, Virginia 22210
- **COMPLETE AND SIGN BELOW**

____
Purchase Order No.

____
Date

____
Signature

____
Title or Dept.

PRICE LIST

MICROFICHE (MF)		PAPER COPY (HC)	
Number	**Price**	**Number**	**Price**
1 to 5	$ .75	1 to 25	$1.50
6	.90	26 to 50	1.85
7	1.05	51 to 75	3.15
8	1.20	76 to 100	4.20
Each additional microfiche	.15	Each additional 25 pages	1.20
Postage: $.18 for up to 60 microfiche $.08 for each additional 60 fiche		**Postage:** $.18 for first 60 pages $.08 for each additional 60 pages	

STANDING ORDERS
Subscription orders of microfiche copies of all ERIC reports announced in each issue of **Research in Education** average $116 per month at the rate of 7.8¢ per microfiche. Postage extra.

BACK COLLECTIONS (postage included)

Reports in *Research in Education for* 1966 and 1967	$ 351.25
Reports in *Research in Education for* 1968	1057.37
Reports in *Research in Education for* 1969	1261.43
Reports in *Research in Education for* 1970	1284.37
Reports in *Research in Education for* 1971	1498.96
Reports in *Research in Education for* 1972	1549.60
Reports in *Research in Education for* 1973	1351.24
Reports in *Research in Education for* 1974 (4 issues)	444.89
Entire Collection	8799.11

SPECIAL COLLECTIONS (postage included)

Office of Education Research Reports 1956-65	369.24
Pacesetters in Innovation, Fiscal Year 1966	132.05
Pacesetters in Innovation, Fiscal Year 1967	160.09
Pacesetters in Innovation, Fiscal Year 1968	102.47
Selected Documents on the Disadvantaged	306.06
Selected Documents in Higher Education	140.14
Manpower Research: Inventory for Fiscal Year 1966 and 1967	72.81
Manpower Research: Inventory for Fiscal Year 1968	40.66
Manpower Research: Inventory for Fiscal Year 1969	52.77

NOTE
1. Postage for first class airmail or foreign is extra.
2. Paper copy (HC) will be full page reproductions with heavy paper covers.

TERMS AND CONDITIONS

5. LIABILITY
CMIC's liability, if any, arising hereunder shall not exceed restitution of charges
In no event shall CMIC be liable for special, consequential, or liquidated damages arising from the provision of services hereunder.

6. WARRANTY
CMIC MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO ANY MATTER WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

7. QUALITY
CMIC will replace products returned because of reproduction defects or incompleteness. The quality of the input document is not the responsibility of CMIC. Best available copy will be supplied.

8. CHANGES
No waiver, alteration, or modification of any of the provisions hereof shall be binding unless in writing and signed by an officer of CMIC.

9. DEFAULT AND WAIVER
a. If Customer fails with respect to this or any other agreement with CMIC to pay any invoice when due or to accept any shipment as ordered, CMIC may without prejudice to other remedies defer any further shipments until the default is corrected, or cancel this Purchase Order.
b. No course of conduct nor any delay of CMIC in exercising any right hereunder shall waive any rights of CMIC or modify this Agreement.

10. GOVERNING LAW
This Agreement shall be construed to be between merchants. Any question concerning its validity, construction, or performance shall be governed by the laws of the State of New York.

1. PRICE LIST
The prices set forth herein may be changed without notice; however, any price change will be subject to the approval of the National Institute of Education Contracting Officer.

2. PAYMENT
The prices set forth herein do not include any sales, use, excise, or similar taxes which may apply to the sale of microfiche or hard copy to the Customer. The cost of such taxes, if any, shall be borne by the Customer.
Payment shall be made net thirty (30) days from date of invoice. Payment shall be without expense to CMIC.

3. REPRODUCTION
Materials supplied hereunder may only be reproduced for not-for-profit educational institutions and organizations; provided however, that express permission to reproduce a copyrighted document provided hereunder must be obtained in writing from the copyright holder noted on the title page of such copyrighted document.

4. CONTINGENCIES
CMIC shall not be liable to Customer or any other person for any failure or delay in the performance of any obligation if such failure of delay (a) is due to events beyond the control of CMIC including, but not limited to, fire, storm, flood, earthquake, explosion, accident, acts of the public enemy, strikes, lockouts, labor disputes, labor shortage, work stoppages, transportation embargoes or delays, failure or shortage of materials, supplies or machinery, acts of God, or acts or regulations or priorities of the federal, state, or local governments; (b) is due to failures of performance of subcontractors beyond CMIC's control and without negligence on the part of CMIC; or (c) is due to erroneous or incomplete information furnished by Customer.