DOCUMENT RESUME

ED 193 196 SP 016 769

AUTHOR Blue, Terry W.: And Others
TITLE Refining Pennsylvania's Developing Model of Teacher Education.
PUB DATE 80
NOTE 65p.: Paper presented at the Crossgates Seminars on the Pennsylvania Design for Professional Education and Certification (September 30-October 3, 1980).

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Beginning Teachers: Change Strategies: *Educational Change: *Educational Cooperation: Higher Education: Inservice Teacher Education: Preservice Teacher Education: *Professional Development: *Relevance (Education): Research Utilization: Teacher Certification: *Teacher Education Programs: *Trend Analysis
IDENTIFIERS *Pennsylvania

ABSTRACT

By describing and defending six assumptions about teacher education, the Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching (PALACAT) defines the purposes, goals, needs, and foundations of teacher education. The role of research in teacher education and current practices in teacher education are analyzed, and a four stage sequence for teacher education that meets the position statements of PALACAT is proposed. The program includes: (1) a strong undergraduate base of foundational studies blended with field experiences: (2) a closely supervised one-year period that initiates the beginning teacher into the profession: (3) a period of continuing induction that enables teachers to develop skills and attitudes necessary for full professional status: and (4) an ongoing program of inservice education and professional development. (Author/CJ)

REFINING PENNSYLVANIA'S DEVELOPING MODEL OF TEACHER EDUCATION

A position paper presented by the

Pennsylvania Association of Liberal Arts Colleges
for the Advancement of Teaching
(PALACAT)

at the
Crossgates Seminars
on the
Pennsylvania Design for Professional Education and Certification

September 30 - October 3, 1980

Prepared by

Terry W. Blue - Franklin and Marshall College
Madison Brewer - President, CPATE
Robert M. Buchmeier - Villa Maria College
Barbara Burkhouse - Marywood College
Sister Marie Immaculée Dana - Carlow College
Sister Mary Lalande - Immaculata College
Thomas E. McDuffie - St. Joseph's University
Barbara B. Michel - Franklin and Marshall College
Robert P. Schall - Allegheny College

July and August, 1980

ABSTRACT

In order to establish the philosophical base upon which the position paper is postulated, six assumptions are listed, described, and defended. Through these assumptions PALACAT: (1) defines teaching as both art and science; (2) describes the appropriate goals of preservice teacher education; (3) clarifies the foundation upon which professional and technical skills rest; (4) emphasizes the need for cooperation among all professionals in education; (5) explains the role of schools, colleges, and departments of education in preservice and inservice education; and (6) offers a rationale for selecting a "broker" for teacher education. (5.1 and 5.4)

The role of research in teacher education is reviewed and analyzed. It is concluded that although the knowledge base is substantial and developing rapidly, the research element of this base is not well organized and offers little insight into the process of teacher education because the generalizability and stability of teacher behaviors are limited and because other variables confound studies of teacher effectiveness. Further, the point is made that educational research is misdirected. It focuses on isolated teacher behaviors that may lead to changes in student performance, but it fails to provide guidance on how to teach teachers to be effective. (5.3)

Next, current practice in teacher education in the United States and in Pennsylvania is analyzed. A series of needs at the national level and a set of strengths and weaknesses in Pennsylvania are listed for preservice education, induction, and continuing professional development. The case is made for the continuation of the current program approval approach. (1.1-1.8; 2.1-2.8; 3.1-3.8; 5.3)

A four stage sequence of teacher education is proposed which includes:

1. A strong undergraduate base of foundational studies blended with field experiences and offered through flexible and creative teacher education programs defined by program approval standards. It would culminate, generally after four years, in preliminary certification that would allow entry into Pennsylvania's induction stage and into the first year of teaching in other states. (1.1-1.8)

2. A closely supervised one year period of initial induction into the profession in a controlled and supportive environment through which the neophyte teacher begins to make the transition from student to full professional status. This first year of service in the profession would be planned, implemented, and evaluated by all professional educators under the leadership of local school personnel. (2.1-2.8)

3. A period of continuing induction which enables teachers to develop the knowledge, skills, attitudes, and beliefs necessary for independence and full professional status. Professionals in the school setting would take the responsibility for assessing the professional qualifications of inductees according to commonly developed criteria. (2.1-2.8; 3.1-3.8; 4.3; 4.4)

4. An ongoing program of inservice education and continuing professional development which is planned and systematic and which is reviewed and evaluated on a regular basis both for personal growth and for periodic renewal of certification. (3.1-3.8; 4.3; 4.4)

Throughout the paper, the call is made for increased cooperation among all professionals in education.

TABLE OF CONTENTS

INTRODUCTION

Increasingly in recent years education has come under attack in the United States. The popular media, in particular, have focused on the problems with which schools currently must cope. Time, for example, declares in a cover story, "Help! Teacher Can't Teach!" and discusses "the multifaceted crisis of America's public schools" (June 16, 1980). While many symptoms and causes are described and examined in such reports, a common conclusion surfaces in many of these analyses -- teachers are being blamed for much of the trouble in the classroom.

Although the accuracy of this conclusion will not be directly treated in this paper, a by-product of the current debate, the proposed need to reform programs that prepare such teachers, will be discussed here. Teacher education to some, it seems, is a logical choice for the role of scapegoat. Radical changes, they suggest, must be made in teacher preparation programs across the nation.

The Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching (PALACAT) does not share the view that radical readjustments are required in the process used in Pennsylvania to prepare teachers for the classroom. Moreover, the Association considers current plans in the Commonwealth to refine the developing model(s) of teacher education a reasonable and open attempt to seek out even better ways to prepare teachers for an ever changing role in this society, not an excuse to dismantle and rebuild teacher education from the foundation up. PALACAT, therefore, welcomes this opportunity to present its views on the need for change, the philosophical base for any change, and the direction such change should take. In medical terms, the Association

calls for limited but clearly prescribed treatment, not radical surgery, in its proposals. It attempts to do this in a logical and complete manner.

First, the assumptions upon which this analysis is based are listed, described, and defended. While all may not agree with each of the assumptions, familiarity with them is crucial to understanding the subsequent comments and conclusions of this paper. For that reason the assumptions are presented in some detail in an effort to clarify the philosophical base from which PALACAT is working. The six assumptions:

1. define teaching as both art and science,
2. describe the appropriate goals of preservice teacher education,
3. clarify the foundation upon which professional and technical skills rest,
4. emphasize the need for cooperation among all professionals in education,
5. explain the role of schools, colleges, and departments of education in preservice and inservice education, and
6. offer a rationale for selecting a "broker," a change agent, for teacher education.

In the second part of this paper the role of research in teacher education is reviewed and analyzed. As a first step Denemark's (1980) assertion that the present knowledge base, the "body of knowledge and a repertoire of behaviors and skills (professional culture) needed in the practice of a profession" (9), justifies lengthening and reforming initial teacher preparation is evaluated. The position is taken and defended that although this knowledge base is substantial and developing rapidly, the research element of this base is not well organized and offers little insight into the process of teacher education. Research is inadequate, it is suggested, because the generalizability and stability of teacher behaviors (specific teacher actions in the classroom) are limited and because other variables (school conditions, student characteristics. qualities of teaching, etc.) confound studies of teacher effectiveness.

Further, the relationship between research and teacher education is analyzed. The point is made that research designed to describe good teaching and to

support changes in teacher preparation programs is misdirected. That is, there is a critical differerce between studying what makes teachers effective and what is involved in teaching teachers to be effective. It is asserted that current research largely investigates the former issue but does little to explicate the latter. This position is defended through a fairly lengthy discussion of two schemes for getting from research to practice. One of these, the conversion scheme, focuses on establishing links between isolated teacher behaviors and student performance. This searching for causal links, it is suggested, leads to teacher education programs that are completely rule-governed and task-focused -- programs that are based on an overextension of the competency-based model for teacher education and that lead to an overemphasis on the merely technical sides of teaching. The second scheme, the transformation scheme, PALACAT claims, provides a more desirable direction for research. The purpose of this scheme is to encourage the transformation of practitioners' beliefs from being subjectively to objectively reasonable. The results of research are used as evidence, as information, and as sources of insight for teachers to consider along with their experiences, their conception of what is worth knowing and doing, and their expectations of how to act in specific historical, social, political, and economic settings. PALACAT proposes that this scheme should govern educational research, and that research should be used as the source of foundational principles which teacher educators can use for guiding others in the formation of objectively reasonable beliefs about teaching, not as a source of edicts for forcing prospective teachings into one common mold.

The third major section of this paper presents an analysis of current practice in teacher education. First, the national picture is briefly critiqued and a series of needs related to preservice education, induction, and continuing professional development are listed. Then, current practice in the Commonwealth

is analyzed, based on the experience of PALACAT members with the present teacher education system. A number of strengths and weaknesses of current practice at the same levels as above (preservice education, induction, and continued professional development) are suggested. The final part of this section investigates more completely a chief strength PALACAT finds in Pennsylvania teacher education -- a program approval approach that promulgates well conceived standards which channel and direct preparation programs but which do not stifle individual or institutional latitude. This approach, the Association asserts, should be retained and defended at all costs.

The body of the paper concludes with a series of proposals for change. These proposals flow from the base established in the assumptions; they recognize the inadequacy of current research, when used alone, to provide a base for change; they are set in context by the discussion of current strengths and weaknesses; and, they are based upon the scholarly opinion, professional wisdom, logical analysis, and experience of those who care about teacher education.

A four stage process of teacher education is proposed. It includes:

1. A preservice stage which essentially would be the same as it is now but which would include strengthened cooperation between schools, colleges, and departments of education and all other professionals in education. It would provide a strong undergraduate base of foundational studies blended with field experiences and offered through flexible and creative teacher education programs defined by program approval standards. It would culminate in preliminary certification that would allow entry into Pennsylvania's induction stage and into the first year of teaching in other states.
2. A closely supervised one year period of initial induction into the profession in a controlled and supportive environment through which the neophyte teacher begins to make the transition from student to

full professional status. This first year of service in the profession would be planned, implemented, and evaluated by all professional educators under the leadership of local school personnel.

3. A period of continuing induction which enables teachers to develop the knowledge, skills, attitudes, and beliefs necessary for independence and full professional status in a school setting. Professionals in the school setting would take the responsibility for assessing the professional qualifications of inductees according to criteria developed in cooperation with other professionals in education.

4. An ongoing program of inservice education and continuing professional development which is planned and systematic and which is reviewed and evaluated on a periodic basis both for personal growth and for periodic renewal of certification. All professionals in education would be expected and required to participate in programs of continuing professional development in order to remain vital members of the profession.

More specific suggestions are included in the discussion of each stage. A matrix summarizing elements of the proposal is presented for the convenience of the reader.

PALACAT member institutions and their institutional repres ntatives look forward to sharing and discussing the ideas included in this paper and to hearing and discussing the ideas presented by other groups. As an association, PALACAT pledges to continue to work with its partners in education in the rewarding effort to improve the quality of teacher education in Pennsylvania and in the nation.

PALACAT ASSUMPTIONS ABOUT TEACHER EDUCATION

The suggestions for change proposed by the Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching cannot be understood fully unless one is aware of the assumptions upon which the association's views are defined and based. To that end, six assumptions are presented and explained below. They are among those held in common by PALACAT member institutions.

Assumption One

Teaching is a complex task and is not easily mastered.

Teaching cannot be understood only as science -- a set of rituals or procedures guaranteed to produce particular results under certain conditions. One who has ever tried to "teach" following such prescriptions quickly discovers that much of the teaching process is better described as art -- a combination of a personal variety of information, skills, attitudes, and understandings which somehow contributes to the development of another human being. Formal instruction leads developing professionals to understand issues, ideas, trends, and techniques that have been found to be of interest and value to others in similar situations and with similar needs. Formal instruction, when blended with teaching experience and personal reflection, encourages teaching professionals to integrate all that they know and understand about their content field, about their world, about their professional and technical skills, and about their personal abilities, attitudes, and beliefs. Developing professionals are led to utilize the knowledge and comprehension they have acquired in all of their

experience critically and rationally to apply, analyze, synthesize, and evaluate scientific, artistic, and personal principles in the laboratory and workplace of professional education -- the school.

Assumption Two

Entry level competence in teaching is the appropriate goal for preservice teacher education.

Preservice teacher education, conducted by colleges and universities, is the forum for awakening students to the tentative nature of pedagogical principles and for developing students' dispositions to search for improvement throughout their professional careers. Its purpose is to establish the base, to provide and develop the knowledge, skills, attitudes, and understandings necessary for professional growth, not to turn out fully developed professional employees.

Preservice teacher education programs of schools, colleges, and departments of education (SCDEs) concentrate on those subjects and approaches that are taught best in a traditional learning environment rather than on the job. SCDEs have the responsibility of teaching generalized principles and techniques that are germane to a broad range of settings and circumstances. Specific applications are provided through early and continued field experiences and through observation and practice teaching under the guidance of supervisors, but the full potential of these applications cannot be realized until the developing professional can use this evidence and information as a source of insight to consider along with his or her full-time experience in the teaching world.

Preservice programs give potential professionals the opportunity to consider the broadest range of options, evaluate the benefits and risks of such

options, and generate new approaches. Concentration is upon the process of problem solving rather than on the generation of an immediate solution. This enlarges the students' repertoire of potential responses to future problems that are likely to involve substantial resources and severe constraints of time.

Preservice teacher education programs further give students the opportunity to examine the interrelationship of the philosophical, historical, social, cultural, political, and economic foundations of education in such a way that generally is not possible or practical in the work setting. Human needs and values are determined and clarified as part of the process of shaping human sensitivity toward desirable and rationally justified patterns of action. The full resources of colleges and universities are employed in this effort to help individuals develop their logical and critical abilities, analytic skills, historical perspective, aesthetic sensitivity, and ethical system.

Finally, preservice teacher education programs allow students to concentrate their efforts on preparing for their "work," rather than their "jobs." According to Thomas Green (1968), a job is merely an instrument for providing a sufficiency of material means for one's work; one's work, on the other hand, is the task of doing one's life well as a human being. While one's job is relatively unimportant, one's work is supremely important. Preservice teacher education programs, particularly those with a strong liberal education component, help to develop the background, attitudes, and values necessary for rational, moral, and active educators to use their jobs as the necessary means for their work.

Assumption Three

Professional studies within preservice teacher education rest upon the foundation of general education.

The development of the professional and technical skills required to enter the teaching profession as a neophyte is not an isolated element of teacher education programs. Rather, these skills are an outgrowth and product of the general education required of all students. Many of the skills important to prospective teachers, for example, are common to other helping professions. Moreover, since thirty per cent of the personnel trained for teaching never enter the field (Ryan, 1974), it seems impractical as well as unwise to limit education to purely professional studiea during any stage of initial professional preparation.

The role of general education in teacher preparation programs is clearly described by George Denemark when he offers that

> The general education of teachers should not be different from that of students in other fields unless the differences represent extended opportunities for prospective teachers to explore the interrelationship of knowledge and their implications for teaching and learning. An adequate general education should:
>
> .Contribute to personal development in areas such as physical and mental health, moral and aesthetic values, and creative expression
> .Develop an understanding of the symbolic information found in the environment
> .Promote an understanding of the natural and social environment
> .Foster an understanding of the interrelationship of knowledge
> .Represent a significant content learning experience (1980).

Denemark sounds quite classical in his stand. Further, he does not contradict Hurn who concludes that

> The theory that the liberal arts are no longer relevant is not only wrong but subversive of the educational values to which most of us still subscribe. It would be well for us to base our claims for higher education upon the unmeasurable benefits that are today only mentioned as afterthoughts: the expansion of intellectual horizons, growing sophistication, tolerance of diversity, self realization, and even the pursuit of knowledge as good in itself (1978).

Teacher education programs build upon this base of liberal education.

Bennett summarizes the relationship between the liberal arts and the dimension of personal growth which should undergird preservice teacher education in slightly more detail.

> The aim of liberal education is identified as the provision of basic information or content in the major areas of human concern. It stresses the cognitive skills deemed to be important, and it requires the individual to grapple in some fashion with the meaning of human experience and, thereby, with the significance of his own life. The cultivation of such awareness and understanding is related to the development of a personal value system. Certain characteristics have emerged as fruits of liberal education: intellectual curiosity, conviction with humility, a sense of moral responsibility, tolerance, open-mindedness, and the willingness to try to develop and live a reasoned view of existence.
>
> Liberal education aims in self understanding which involves the development of a philosophy of life and an appraisal of personal capacities and strengths... This requires more than critical judgment. It requires content and knowledge as well. (1977)

Reasons for emphasizing the importance of general education for teacher education programs need not be derived only from a philosophical base. Rather, practical considerations also support such a stand. The recurring demand for teacher accountability and basic academic competency of teachers seems to require that teacher education institutions must

> accept responsibility for quality performance from our graduates. At a minimum this should mean: a. College level verbal and numerical literacy; b. Competence in subject matter; c. Skill in teaching; d. Concern for others; e. Concern for society; f. Understanding of our social, cultural, and educational heritage. (Egbert, 1980)

Finally, by emphasizing general education, teacher education institutions guard against underestimating the role of communication in teaching. Communication, based upon a depth of understanding, is central to the art of teaching. In the words of Smith, Pearl, and Cohen,

> To go from the disciplines to the content of instruction involves a tremendous burden of translation. Only in part can the content of a discipline be adapted to a child's level of knowledge and experience. The teacher should know the content he is to teach as well as the discipline from which the instructional subject matter may be taken. Perhaps the most serious result is the inadequate preparation of the teacher in the subject matter he will actually teach. Often, he cannot follow its roots very far into the discipline or handle it skillfully in teaching. And he is frequently unable to see its significance in the life of the pupils. (1969)

Assumption Four

Education is a complex enterprise requiring the cooperative efforts of all involved groups.

Because of its complex nature, the quality of education depends to a very high degree on the voluntary exercise of insight, courage, and commitment by all involved institutions, agencies, organizations, groups, and individuals. Their efforts cannot be coordinated by force, and their behavior cannot be programmed by regulation or law. The basis of coordination must be a shared commitment to important educational ideals.

The profession of education will develop only through a dialogue that overlaps all parts and levels of the education enterprise. Further, the dialogue must respect and utilize the experience, awareness, theories, and needs of all participants and draw upon the strengths of all groups.

Assumption Five

Schools, colleges, and departments of education can serve as a "broker" for change in teacher education.

There is a leadership vacuum in teacher education. No group has consistently and clearly served in the role of "broker" for teacher education. That is, no group has been able to coordinate the efforts of the proliferation of groups concerned with the improvement of teacher education in order to move beyond the piecemeal approach to professional change and development. Schools, colleges, and departments of education are ideally situated and involved to fill this role as "broker." They can coordinate the professional dialogue among groups, recognizing that each group has its own priorities, rules, and reward systems and guaranteeing that at every phase and stage of collaboration that a variety of differing authorities, responsibilities, and competencies are provided. (CPATE, 1979, 21-24)

As Giles (1979) has clearly pointed out, the American decision to base teacher education in colleges and universities was intentional, based upon both the expectations for colleges and universities and the conceptions of what professional education should be. The development of teacher education in this country was guided by three basic ideas: a. that teachers need special professional preparation for teaching, b. that the study and development of teacher education is a matter of public concern, and c. that the study of this field is properly in the colleges and universities.

Schools, colleges, and departments of education have raised teaching from apprenticeship to professional status. They have developed preparation programs for teachers and other school personnel that provide more than just immediate and technical skills, and they are integrated into the academic climate of

colleges and universities and society at large. SCDEs have contributed to knowledge about learning and teaching and have prepared personnel who have been able to respond to new and emerging needs in the schools.

Schools, colleges and departments of education have been responders to many publics and have been the integrated switchboard among these publics. While the responses may not have been as timely or as forceful as they might have been, an essential service to education has been rendered. They have provided a means of consumer protection for society in developing and administering programs of professional preparation and development which are publicly analyzed and evaluated by external bodies for approval and accreditation. SCDEs have provided for the study of the implications and impact of educational policies established or being considered. They have provided research into the factors that promote or inhibit learning. They have thus performed the essential functions of a third party, a broker, deeply interested in but neither the user of nor the promotional organization for the product.

Professions need a setting that can be a center of study about the field, a place where new ideas are generated, where research and study can be conducted, and where results can be disseminated without interfering with the main job of the practicing profession. Schools, colleges, and departments of education offer this setting for teacher education, since they have the resources of their total institutions to bring to bear on these activities. It is in the colleges and universities, with their commitment to the creation and application of new knowledge in all endeavors of human activity, that education for the teaching profession can thrive. (Giles, 1979, 5-6)

Assumption Six

Schools, colleges, and departments of education have an appropriate and important collaborative role in inservice education.

The role of schools, colleges, and departments of education in inservice education and in the continued development of professional teachers is to complement, support, and enrich the activities of schools, professional organizations, and individual teachers.

The job of the school is to provide the setting, encouragement, and motivation for new and continuing teachers to become, and be judged, outstanding. Professional organizations supply the teachers with motivation to become professionals. SCDEs, as places where ideas can be learned, tested, and subjected to objective analysis, provide the means for bringing the benefits of the academic community to the workplace.

Through systematic, carefully and individually planned programs of study, developing professionals can be led to interpret inservice experiences and to elevate practice to an art. They develop insights into why they are teaching, what they are teaching, how they are teaching, and why they need these insights. With the assistance of SCDEs and others, they learn how to deal with the system without submitting to it and how to develop a base for continuous, life-long education and improvement.

THE ROLE OF RESEARCH IN TEACHER EDUCATION

It is the view of the Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching that research currently available on teacher behaviors and teacher education is yet too weak and misdirected to serve as the base for a new model of teacher education. This assertion is supported by the summary and analysis of such research presented in the sections which follow.

Summary of the Research

While the knowledge base for teaching is substantial and developing rapidly, the research component of this base has not been organized effectively and offers little insight into the process of teacher education. Because the generalizability and stability of teacher behaviors are limited and because other variables confound studies of teacher effectiveness, the present knowledge base does not justify lengthening or radically reforming initial teacher education programs.

Problems inherent in the knowledge base for teacher education are listed below. These are drawn from reviews of research on teacher behaviors and teacher education published between 1963 and 1980. A more complete discussion of these conclusions can be found in Appendix A.

1. The validity of judgmental criteria of teacher effectiveness depends on the assumption that a science of teacher behavior already exists, and studies using such criteria can hardly be expected to contribute much to the birth of a science (Medley and Mitzel, 1963).
2. Research on teacher education is extremely scanty and in many areas is nonexistent (Denemark and McDonald, 1967).

3. Research on teaching has been unsystematic, conceptually impoverished, and methodologically unsophisticated (Centra and Potter, 1980).

4. Most studies are methodologically inadequate to resolve the issue of whether the absence of clear, replicable relationships between teacher behavior and student outcomes is due to measurement problems or problems in conceptualization (Shavelson and Dempsey-Atwood, 1976).

5. Teacher behavior is only one of many factors affecting student learning (Centra and Potter, 1980).

6. Classroom research is limited in its usefulness by the tendency to examine only a small portion of the events occurring within classes and the tendency to ignore the contextual properties of classrooms (Barr and Dreeben, 1977).

7. Teacher behaviors are seldom identical in all observable respects. Any given behavior does not have the same effect on every pupil every time it occurs (Medley and Mitzel, 1963).

8. Typical measures of teacher behavior and effectiveness are unstable, and teaching acts are unrelated to student outcomes (Shavelson and Dempsey-Atwood, 1976).

9. Findings on teacher effectiveness are equivocal on the generalizability and stability of measures of teacher behavior (Shavelson and Dempsey-Atwood, 1976).

10. Research is inadequate for providing the basis for a new model of teacher education because even if one knew what made for effective teaching practice this would not pro-

vide a basis for what must be done to teach teachers to be effective (Barr and Dreeben, 1977).

Analysis of the Research

For years many researchers and teacher educators have been devoting their energies to attempting to find the techniques necessary to good teaching and then trying to instill these techniques in tomorrow's teachers. Kliebard (1973) suggests that this approach has led to little progress.

> What has gone on in the name of the scientific study of teaching has been, in large measure, raw empiricism, a blind and almost necessarily futile groping for statistically significant relationships. Even if a persistent statistical relationship were somehow found, the absence of a theoretical framework for the research would preclude the development of any scientific understanding of the relationship and, for that matter, would probably rule out any useful purpose to which the research could be put... We might as well admit that the secrets of success in teaching, if they are knowable at all, are a long way from being revealed and are particularly impregnable to a direct assault. The big 'question' is too formidable, too imposing, too cosmic to ask directly. We have to sneak up on it... Curbing our overwhelming sense of urgency and scaling down our grandiose ambitions by taking on modest tasks may in the long run bring us rewarding returns on our research efforts in teaching... We might as well face the likelihood that teaching may not consist of standard best ways to do particular things. Being a good teacher may involve infinite possible human excellences and appropriate behaviors, no one more a guarantor of success than the other. As we attempt to observe and understand teaching, we may discover that teaching, after all, does not involve the exercise of a technical skill... But once the technical framework is discarded, the search for the best way becomes meaningless, and new, perhaps more fruitful 'questions' in teacher education may emerge. (Kliebard, 1973, 20-24)

Gary Fenstermacher (1979) proposes such a new "question" for teacher education. He describes two schemes for getting from research to practice. The first is a conversion scheme. It presupposes that the causes for predetermined outcomes

are "out there" somewhere in an ordered universe of schooling waiting for discovery by imaginative researchers. This process-product research focuses on establishing links between teacher performance and student success and in predicting what teachers should do in order to be effective in getting students to succeed. The establishment of causal links leads to teacher education programs that are completely rule-governed and task-focused -- programs that abuse the competency-based model.

The second scheme for getting from research to practice is the transformation scheme. In this approach, findings in teacher performance and student success are not converted to rules by those who conducted the research, but rather are presented as evidence to those who use these findings. The purpose of this presentation of evidence is to encourage the transformation of practitioners' beliefs from being subjectively to objectively reasonable. Rule conversion may be an outcome of the transformation process, but only if the conversion is undertaken by those who are expected to follow the rules. The attention of researchers would turn to the subjectively reasonable beliefs that teachers already hold. An examination of these beliefs and the study of evidence bearing upon them would become the initiating force for teacher effectiveness research. What the researcher committed to the transformation scheme would seek is knowledge that enables teachers to enhance both their own educations and the education they provide for their students. This knowledge is not gained by pursuing rules and causal links, but by discarding these questions in favor of inquiries designed to reveal the subjectively reasonable beliefs of teachers. This is the new "question" for teacher education.

If one understands the transformation approach, it is evident that there is a critical difference between what makes teachers effective and teaching teachers to be effective. There is a temptation for those who embrace the conversion scheme to justify it on the grounds that mastery of content and the theorems and rules for teaching content are so important as to override attentiveness to the

thoughts and feelings of those who teach. This scheme ignores teacher beliefs and tramples them on its way to writing mandates and decrees. It almost totaily ignores the need to confront the subjectively reasonable beliefs of teachers due to its dependence on the behaviorist legacy. That is, researchers of this perspective think that what the teacher thinks, or feels, is not the proper object of empirical inquiry. Rather, the proper object of study is what the teacher does. This separation of thought and action permits the researcher to concentrate exclusively on behavior which is directly accessible by observation. Also, such researchers feel that the causative factors which account for a person's behavior are external to the person. This view of causation as outside the person, as exogenous, is prominent in process-product research, where explanations for student gains are sought by examining what teachers do. A researcher who supposes exogenous causation as the scientifically proper way to account for an individual's behavior is not likely to entertain research designs and methodologies that deal with the subjectively reasonable beliefs of teachers.

By following the conversion scheme, researchers may learn from their studies, but this attempt to account for teacher effectiveness is not an educational activity. The act of teaching teachers is, however, a potentially educative activity -- potentially educative because there are ways of teaching teachers that are not educative. Adoption of the conversion scheme, for example, destroys this potential. This approach terminates in rulebound procedures, evocative of training programs of the most elementary nature. The potential for education is realized only when the results of the researcher's inquiry are used as evidence, as information, and as sources of insight for teachers to consider along with their experiences.

Discussion of rules and edicts without concern for the feelings, beliefs, and experiences of teachers is an activity of limited value because the process-product research on teacher effectiveness lacks a normative theory of education.

The research does not incorporate a conception and justification of what is ultimately worth knowing and doing, it includes no view or defense of right conduct or moral integrity, nor does it give consideration to or argument for the ethical obligations and reasonable expectations of persons who act in specific historical, social, political, and economic settings.

The broad skills that are needed reasonably to assess and evaluate different and competing policies and to understand the wider social and personal implications of educational practice are not simply the by-product of performing well a variety of technical tasks that are a part of classroom teaching. Rather, the development of these kinds of skills requires that careful attention be given in the preparation and development programs for teachers to experiences and learning activities that address the relationship between the school and larger society and that provide an understanding of the way in which the normative and conceptual side of educational problems can be recognized and addressed. (Fenstermacher, 1979)

In fact, the erosion in these areas may be seen as part of a larger movement which has the effect of reducing the "skills" required for a teaching position, as illustrated by the various attempts to create"teacherproof" curricula, materials, and prescriptions for instruction. This leads to what Apple and Feinberg (1980) call the "deskilling" of the profession. Deskilling implies that the level of competence and thoughtfulness supporting an occupation or profession is reduced. All aspects of a job are standardized by others. The merely technical sides of teaching are emphasized and concern for the wider role of the school and its relation to the highest goals and aims of society are lost. As educational research becomes more and more quantitative, fundamental moral issues are expressed merely in technical terms, and the sophisticated and highly specialized methods of the research leave the impression that only the expert has the ability to

address, analyze, and evaluate important issues. As these tendencies increase, the fundamental purpose of educational debates is lost, the researcher is allowed to define the issues, and the educator and the community are in danger of becoming but the victim of the experts and their methods.

Generating knowledge and getting people to use it appropriately and well are two different activities. The former is the outcome of good research. The latter is an outcome of good education. Researchers use their work to study teaching, while educators use their efforts as a source of foundational principles for guiding others in the formation of objectively reasonable beliefs. The work of the researcher of teaching and the teacher of teachers is different, but complementary. The researcher is the generator of knowledge, a source of evidence for the teacher educator. The teacher educator is a transformer, a source of problems for the investigatory talents of the researcher. Such a view is a way of conceiving of the study of teaching so that the results of the study are more productive of knowledge that enhances education, in contrast to simple acquisition of technical skills so characteristic of a training conception of teacher preparation and development. Both teacher educators and researchers who view teaching through the transformation lens are not interested in peddling findings to high bidders for their talents, be these rule makers, policy makers, or policy administrators. On the contrary, their primary and mutually held concern is for education of teachers that is expressive and evocative of the education they hope teachers will provide for their students -- education for "work."

AN ANALYSIS OF CURRENT PRACTICE

Teacher Education in the Nation

A national, broad based perspective on the weaknesses of present practice is provided by the work of Fuller and Bown. After comparing the curriculum followed by most teacher education programs to the sequence of needs experienced and expressed by preservice and beginning teachers, Fuller and Bown conclude that "most programs meet the needs of teachers in a sequence different from the sequence in which teachers feel the needs." (1974,39)

Further, these writers summarize the published analyses of teacher education in light of this needs mismatch and indicate eleven inadequacies of current practice. Teacher education, they report, does not:

1. Speak to the needs of teachers.
2. Provide for the survival needs of beginning teachers.
3. Place beginning teachers in assignments designed to modulate their stress.
4. Resolve the problem of class control in the context of the teaching situation.
5. Train for independence.
6. Broaden teachers' academic backgrounds.
7. Provide resources for personal development.
8. Provide means for teachers to develop professional and influential personal relationships with students.
9. Develop attentiveness to the teacher's own power of conflict resolution.
10. Provide means to learn to use feedback constructively.
11. Provide rewarding experiences while learning to teach.

It is probably obvious from this list that Fuller and Bown define teacher education quite broadly. That is, teacher education in their view includes programs designed to prepare preservice teachers, to induct potential professional employees, and to guide the continuing development of professional personnel. Just as no preservice program could correct all of these inadequacies, no pattern of inservice education could address each of these faults. An effective plan for change must therefore be based upon articulation, cooperation, and shared responsibilities at all levels. Although major responsibility will shift from phase to phase, success is contingent upon the interaction of all interested groups.

The concerns listed by Fuller and Bown can, however, be broadly grouped under three levels of professional growth and development.

1. Preservice education
    a. There is an obligation to make teacher education more need appropriate and rewarding.
    b. There is a need to foster broad ranging survival skills, such as problem solving, decision-making, and learning to learn.
    c. There is a need to provide students with the "tools" for continued intellectual growth.
2. Induction
    a. There is a need to provide a supportive atmosphere, an atmosphere conducive to growth, during the formative first few years of teaching.
    b. There is a need to provide the resources, time, and human assistance necessary to support controlled growth and development.

c. There is a need to relate generalized principles and techniques to the specific requirements of the school setting.

3. Continuing professional development

   a. There is a need to encourage intellectual, professional, and personal growth.

   b. There is a need for continuous, systematic, and planned programs of development based on self-assessment.

   c. There is a need to adjust and respond to societal, institutional, and personal change.

Teacher Education in the Commonwealth

In Pennsylvania during the past decade, teacher educators concerned with all three levels of professional growth and development have been working to meet the needs described by Fuller and Bown and to respond to an era which has change as one of the most certain characteristics. (CPATE, 1979). With the guidance of the Department of Education, schools, colleges, and departments of education have remodeled teacher preparation programs to bring them even more closely in line with program approval standards; administrators and supervisors have developed numerous inservice courses and experiences to address local needs and interests; and classroom teachers through their professional organizations have sought and received greater responsibility and control over all aspects of their professional lives. The foundation for cooperative efforts seems to have been set. It only remains to be seen if it can be more fully developed and used in pursuit of common goals.

What are the strengths and weaknesses of teacher education in the Commonwealth? How are these translated into goals for change, and what assets are

at the disposal of those who use them to lead to change? The Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching suggests the following list.

Preservice Education

Strengths

1. Students study in an atmosphere that challenges them to broaden their learning, acquire decision-making skills, and form habits of life-long learning.
2. Students are guided to examine the interrelationship of the philosophical, historical, social, cultural, political, and economic foundations of education and to incorporate a conception and justification of what is ultimately worth knowing and doing.
3. Students achieve initial teacher certification as well as a strong base in the subject matter they are to teach and in methods of teaching.
4. Students are provided with early and continuing field experiences which integrate and illustrate college instruction.
5. The entry level competence of students is assessed on field-based performance by classroom teachers, administrators, and supervisors.
6. Through the variety and flexibility possible in the program approval approach, students are given the opportunity to choose from a range of conceptual frameworks for preservice training.

Weaknesses

1. There is a need for even greater cooperation and shared responsibility between higher and basic education to ensure more effective design of programs, more complete integrating of practice and theory, and more accurate assessment of preservice practice.
2. Guidelines supporting standards for program approval occasionally are too prescriptive, encouraging an emphasis on simple technical skills and making it possible to ignore important foundational principles and attentiveness to the thoughts, feelings, and attitudes of those who would teach.
3. Approaches to create "teacher-proof" curricula, materials, and methods have led to a deskilling of the profession, a reduction in the competence and thoughtfulness supporting the teaching profession.

Induction

Strengths

1. Induction is locally controlled and is directed at interpreting and meeting local values and needs.
2. Flexible and varied plans for induction are possible and are practiced.
3. Consultant services and supportive services are readily available due to the diversity and geographic proximity of institutions of higher education with approved teacher education programs.

Weaknesses

1. There is a need for a supportive and controlled introduction to the realities of the practice of teaching.
   a. Beginning teachers are too often placed in settings and assigned teaching schedules which would challenge even a master teacher.
   b. Evaluation frequently is seen as threatening, not substantive, as summative, not sequential.
2. There is a need to have professional development attached directly to specific needs of beginning teachers.
3. Induction is occasionally haphazard, based on the availability of jobs and opportunities, not on the design of induction plans or district needs. In short, the problem at times is due to lack of fit with the needs of the local educational agency, not based on fault of the novice teacher.

Continuing Professional Development

Strengths

1. Current practices allow a maximum of individual flexibility and convenience.
2. All groups interested in continuing professional development (SCDEs, administrators and supervisors, professional organizations, etc.) are given the opportunity to structure programs of professional development.
3. Limited restrictions on the content and extent of inservice education frees professionals to pursue programs to meet societal and personal needs.

Weaknesses

1. There is a need to encourage teachers to pursue broadly based continuing education aimed at personal development, training for independence, and developing problem-solving skills in the context of their own classrooms.
2. Self-assessment of learning needs at times is instigated by interest in convenience and cost. That is, planned and systematic programs of study are neglected in favor of convenient and inexpensive opportunities.
3. Teaching practice is not assessed as completely as it is during the pre-service and induction periods.
4. Because a terminal point for continuing professional development (permanent certification) is specified, there is a normal human tendency to stop seeking structured professional development.

These weaknesses offer some guidance as to the direction which should be pursued in the future to improve even more the quality of teacher education in the Commonwealth. The strengths listed are those upon which such efforts should be based. One of these strengths, the program approval model followed in Pennsylvania, requires some additional elaboration at this point, however, due to its importance.

George Denemark has described a set of deficiencies he claims are common to teacher education. He states,

> Despite similarities in course labels individual teacher educators and institutions have been disposed to value their differences more than their similarities on the grounds that such variations show responsiveness to unique teaching-learning conditions and a grass-roots democratic approach to curriculum development. Too frequently, however, variations among programs seem to result from inadequate communication and fragmented approaches than from careful analysis. (1980,21)

PALACAT believes that the program approval process utilized in Pennsylvania demonstrates that Denemark's conclusion is not universally applicable. Well conceived standards channel and direct preparation programs and do not stifle individual or institutional latitude. On the contrary, the approach when used in Pennsylvania allows almost ninety different approaches to teacher education, fosters inter-institutional communication, and merits and earns the respect of the entire education community.

A rigorous system of state-administered program approval has a number of features that commend it.

1. It clearly fixes responsibility for assessing and recommending individuals for certification.
2. It permits the development of preparation programs that are not straitjacketed by a set of "department and credit hour" rules.
3. It opens the possibility of assessing a particular institution's preparatory efforts against views of state and individual interests. (Hazard, et al., 1977)

The state under such a system has the responsibility for protecting state and individual interests by stating standards in sufficiently specific terms that an institution can reasonably judge whether it is promoting and protecting those interests. On the other hand, the standards should be sufficiently flexible to permit the best and maximal utilization of available resources. To be defensible and practicable, the bases promulgated for program review must possess the character of standards rather than rules. There are several reasons for this.

1. Because there is a lack of the necessary knowledge to claim that only one mode of preparing school personnel is best, a variety of approaches should be allowed and encouraged.

2. Standards as opposed to rules provide sufficient latitude to enable, perhaps encourage, institutions to develop programs responsive to the emerging or changing needs for school personnel.

3. Standards as opposed to rules almost inevitably keep questions of state and individual interests under continuing scrutiny.

4. Specificity tends to induce into the standards an unnecessary and frequently indefensible rigidity and arbitrariness. Arguments advocating highly specific standards can at best establish only a highly tenuous relationship between the standards and state interests. (Hazard, et al., 1977)

The program approval process as currently structured and utilized in the Commonwealth is one ultimately responsive to societal needs, guarded by the powers of the state, and interpreted within institutional frameworks. The dynamics of the program approval process ensure that beginning teachers have demonstrated minimal competency and indeed are ready for induction. It is a major strength of the current system, and it is an approach that should be retained and defended at all costs.

A PROPOSAL FOR CHANGE

Introduction

George Denemark's description of the process followed and the relationships evidenced in teacher education programs clearly sets the stage for the proposals the Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching would make for reform of current practice. Denemark states,

> The education of teachers should be considered to begin with admission to college; it continues throughout their professional careers. Preservice education, inservice education, and continuing professional development are essential parts of a unified developmental process. Each makes an important contribution to the professional lives and performance of teacherers; designing one in isolation from the others is likely to result in distortions or the career-long process. (1980,17)

PALACAT, recognizing and emphasizing the need for cooperative efforts in pursuit of a unified developmental process, proposes a four stage process of teacher education which includes preservice education, a two stage induction period (initial and continuing induction), and continuing professional development. The Association suggests that most institutions should retain the four year preservice preparation period. This reflects the opinions of school district administrators, supervisors, teachers and educational specialists, college and university administrators and faculty, intermediate unit employees, and others who responded to questionnaires circulated by the Pennsylvania Department of Education at regional meetings on the School Improvement Plan. Through the present program approval approach, schools, colleges, and departments of education would be challenged to design preservice programs which offer a balanced base for professional development. Cooperation between SCDEs and school based administrators, supervisors, and teachers would, however, be expanded and strengthened. This stage would culminate in preliminary certification that would allow entry into Pennsylvania's induction stage and into the first year of teaching in other states.

The first induction stage would consist of one year of supervised teaching in a controlled and supportive atmosphere. Colleges and universities would provide formative evaluation and technical assistance, the profession would provide practical wisdom, assistance, and role models through master teachers, and administrators and supervisors would provide support in the classroom, flexibility in assignments and work demands, and help in understanding the local schooling process. The second induction stage would consist of an unspecified period of time during which the profession and school district administrators, with the assistance of other interested groups, would assume the responsibility for assessing the professional qualifications of inductees for specific purposes according to criteria established by the profession in cooperation with all partners in teacher education. The amount of time would vary according to the personal and professional needs of the individual teacher.

The final stage would consist of the continuous, life-long development of all professionals involved in schools and in teacher education. This inservice education would be conducted in response to the changing needs of society, the shifting requirements of professional roles, and the desire for personal, intellectual, and professional development. The periodic assessment of each person's needs would lead to the development of individual programs to enrich the general education, special scholarship, professional knowledge, and technical skill of all filling professional roles in education and to renew certification.

The elements of the PALACAT proposal are depicted in the four by six matrix included as Figure 1. The matrix is offered only as a summary of the primary elements of the proposed plan for change. A full description of each stage, its elements and their interrelationships, is presented in more detail below.

Figure 1. A Matrix Summarizing the PALACAT Proposal for Change

	PRESERVICE EDUCATION	INDUCTION		CONTINUING PROFESSIONAL DEVELOPMENT
		INITIAL	CONTINUING	
Primary Location*	College/University	Center for Initial Induction	School	School, College, University, etc.
Primary Leadership*	College/University	School administrators with colleges and universities and the profession	Profession	Guided self-assessment
Time	Usually four years	One year	Approximately two to three years	Periodic renewal
Form of Evaluation	Primarily formative Summative on: general education verbal and numerical literacy	Primarily formative	Provisionally summative	Formative and summative
Control of Admission and Retention*	College/University	Joint decision of partners	Profession - for the profession Administrators - for employment	Self - for professional and personal growth Profession - for the profession Administrators - for employment College/University - for advanced degree
Content	Broad general education Competence in subject matter College level verbal and numerical literacy Beginning professional and technical skill Early and continuous field experience	Application of pedagogical principles Training for independence Understanding the local setting	Basic skills of a fully functioning professional The needs of the school system	Assessed individual needs and interests Retraining for new roles Reacting to societal change

*The cooperation of all groups interested in teacher education is assumed and expected.

Preservice Education

The goal of preservice teacher education should be to provide the prospective teacher with an opportunity to acquire a breadth of knowledge, intellectual skills, personal integrity, unselfish concern for the welfare of others, as well as professional development at the safe entry level of competence.

McDonsld (1978) indicates that although teachers should be prepared to cope with the developmental tasks of the first year of teaching, much of their development will have to occur after they have taken the first teaching position. In fact, it is not until teachers are in full control of the classroom setting and are responsible for the teaching and learning situation that they become aware of the many decisions and problems facing educators in the daily classroom routine. Until a personal awareness of professional tasks occurs, teachers are unable to ascertain professional strengths and weaknesses and have the motivation to seek the necessary help.

PALACAT proposes that the teacher education program be personalized and focus on both the personal and developing professional needs of the prospective teacher. Students should be actively involved in the process of acquiring the knowledge and skills necessary for effective teaching and for acting as a change agent to improve teaching skills throughout their professional careers. A sequential and systematic program of field experiences will help to provide this blend of theory and practice. Therefore, virtually every course in the professional sequence should require a supervised practicum in which prospective teachers are given the opportunity to implement the concepts and skills learned in the college classroom. Teachers, PALACAT suggests, are more likely to understand and appreciate concepts if they are linked with the study of actual behavioral situations.

In order to organize and describe the preservice program it would propose for prospective teachers, PALACAT will use the four components of preparation suggested by Cremin in his Charles Hunt Lecture on teacher education (1977): general culture, special scholarship, professional knowledge, and technical skill.

In the area of general culture, teacher education programs should focus on the liberal arts as a means of preparing broadly-cultivated individuals. Faculty members and students should think seriously together about the substance and meaning of liberal education and the relationship among several fields of knowledge. The cognitive skills deemed to be important should be stressed, and the program should require the individual to grapple in a variety of ways with the meaning of human experience, and, thereby, with the significance of his or her own life. The cultivation of such awareness and understanding leads to the development of a personal value system. (Bennett, 1977) In turn, the development of a value system enables the student to ask the fundamental question: "Is it right or wrong to behave thus?" (MacEoin, 1976, p. 50)

Further, PALACAT member institutions consider the teacher to be more than the sum total of his or her teaching competencies. The personal growth of the prospective teacher remains at the core of development, overlapping into all the other areas of preparation which are only outgrowths of the student's being and knowing. Preparation programs, therefore, should focus on the personal development of the prospective teacher as well as on the development of individual competence in specific areas of liberal arts learning. Such areas include: (1) Decision making, (2) Communication skills, (3) Analytical capability, (4) Effective social interaction, (5) Integration of knowledge, (6) Understanding of culture - in the past and in the contemporary world, (7) Facility in forming value judgments, (8) Response to the arts and humanities, (9) Lifelong learning, and (10) Evaluation techniques.

Competence, in this view, is a characteristic of the individual person, rather than an enumeration of tasks. The goal is not only to have a competent student demonstrate certain abilities, but also for the student to have a personal commitment to using them. (Alverno, 1976)

Since competence in these specific liberal arts learning areas is developed within the various courses and integrated learning experiences of the student's college career, the entire college faculty should participate actively in the formation of the teacher. Also, with practice of these learnings in a variety of settings these abilities become a "way of life" and can be easily translated into specific teaching skills. For example, in preparing the teacher as an effective decision maker the student easily gains expertise in the following specific teaching skills related to decision making:

- Goal setting
- Planning to meet long-range and short-range goals
- Determining ways in which students can learn effectively
- Selecting appropriate methods and materials
- Adapting content to meet the needs of students
- Setting a clear focus for instruction
- Preparing specific objectives for student learning
- Focusing instruction on student need, interest, ability
- Structuring, maintaining and monitoring learning activities
- Selecting appropriate evaluation methods

Included also in the general culture should be preparation in the disciplines undergirding education: psychology, sociology, anthropology, and philosophy. These undergirding disciplines help strengthen the conceptual and value base for professional practice. (Howsan et al, 1976, p. 82) This preparation, when combined with the skills developed through liberal education, provides an excellent preparation for teachers who must themselves implement broad programs of general education, such as the Twelve Goals of Quality Education.

In order that each student may benefit from this in-depth liberal arts preparation, colleges and universities should test each student at admission for the

attainment of basic skills in reading, writing, and independent study. Students who fail to achieve the set criterion level should be given special courses and tutoring services in order to meet their individual needs and the demands of quality teacher education programs.

The second component of preservice teacher education programs, special scholarship, should involve an in-depth preparation in one discipline as well as the ability to reflect on various ways in which this knowledge can be taught to different students at different developmental levels, including students with special needs.

Within the various courses of specific scholarship preparation, faculty members should be asked to focus not only on the concepts and skills of the specific discipline but also on the attainment of important liberal arts competencies as they are related in varying degrees to the learning activities of the discipline.

PALACAT's proposals regarding professional knowledge are based on a reformulation suggested by Cremin (1977). Following this view, teacher education programs should include three areas of professional knowledge: policy studies, developmental studies, and pedagogical studies.

Teacher education programs should include policy studies, those studies in the humanities and social sciences that contribute to an understanding of the aims of education, to the understanding of the situations and institutions in which education proceeds, and to an understanding of the ties between educational institutions and the societies that sustain them and are affected by them.

Developmental studies also should be included. Courses or experiences in this area should involve studies of the humanities and behavioral sciences that enable students to understand human development over the entire life cycle and the different ways in which the various forms of education affect that develop-

ment. Of critical importance are studies of socialization, enculturation, and learnings that make clear the nature and outcome of the educational process.

Finally, teacher education programs should include pedagogical studies, those studies of the practice of teaching and learning in a variety of situations that unite policy and developmental studies with studies of the substantive characteristics of various fields of the curriculum and with studies of the structured characteristics of various learning environments. (Cremin, 1977)

The fourth major component of preservice teacher preparation programs should be technical skill. Prospective educators should be started on the path leading to mastery of the complex skills of teaching. These skills, however, do not develop in isolation; they are not a collection of unrelated abilities. Instead, they should grow from the base of general education, special scholarship, and professional knowledge and should establish the new base for continuing professional development. The six domains of knowledge and skills essential to the professional teacher proposed by Smith and Silberman (1979) clearly seem to focus on such generic competencies.

1. Observation: the ability to observe a phenomenon objectively
2. Diagnosis: a careful analysis of student abilities, achievement, learning difficulties, environmental conditions and curriculum programs
3. Instructional Design and Collaborative Planning: understanding of different types of learning, skill in determine the sequence of instruction and preparation of instructional programs in collaboration with the efforts of colleagues
4. Instructional Management: management of space, time, resources, processes of teaching as well as the conduct of the pupils
5. Communication: Communication demands a richness of experience that permits a representation of ideas in a variety of ways with a sensitivity to the needs of others
6. Evaluation: development of skills in the evaluation of pupil progress and data related to dianosis of pupils and the planning of instruction

Preservice teacher education programs located in colleges and universities, it should be clear, have a challenging mission. It is, however, a calling that

these institutions welcome. Moreover, only colleges and universities currently are in a position to provide many of the human and material resources, opportunities, and support described above as required to set the foundation for professional growth.

Schools, colleges, and departments of education with approved programs of preservice teacher education are confident of their ability to prepare teachers ready to enter the profession. Granted the increased participation and cooperation at the preservice level of all other professionals in education, PALACAT is optimistic that the quality of preservice education offered in Pennsylvania will only be raised above its already high level.

Induction

Following the preservice stage which culminates in provisional certification, the beginning teacher embarks upon a fairly extended period of professional induction. Although some writers, Fenstermacher (1980) among them, consider student teaching a part of this phase, the induction period for present purposes is defined as one that occurs between the completion of preservice education and the acquisition of full professional status. As Tisher puts it,

> Induction is the formal introduction of new teachers into the profession. Teachers are not finished products at the end of preservice education and must learn much more about teaching from their experienced colleagues in school. Induction is an extremely important stage and affects the nature of teachers' socialization into teaching. (1980)

At the heart of induction is the personal need of the new teacher to earn the respect of professional peers, students, and the community upon the assumption of sustained instructional responsibility. At this point in career evolution, a supportive and controlled environment is a priority. Therefore, each employing district should assume the responsibility to place neophytes in a teaching situation which enhances their potential for success. Beginning teachers should not be expected to perform teaching tasks in ways and at levels comparable to their colleagues with years of successful experience. For,

> Research on the first year of teaching reveals consistent experience with particular problems which can be organized into the following categories: culture shock, instruction, students, parents, administrators, fellow teachers, and extensive isolation. The beginning teacher's insecurity about himself and his professional ability serve only to compound the original problems he encounters during his first year. (Ryan, 1974)

A careful placement arranged and supervised by strong school administrators who make available opportunities for modeling by master teachers recognized by the profession and assistance by schools, colleges, and departments of education is required to make the induction experience a valuable and successful one for the

beginning teacher. This tripartite relationship in support of induction exemplifies the cooperative nature of professional development. It represents a major improvement over the present system which frequently might be described as unaided survival or failure in a complex setting.

Depending upon local needs, it might be appropriate to establish what could be called Centers for Initial Induction. Such centers would be organized by administrators and teachers in local districts, by personnel of intermediate units, and by representatives of institutions of higher education in order to meet local induction needs. Through a pooling of resources and expertise, these centers could coordinate the meeting of the induction needs of a consortium of school districts. The nature of these centers, of course, should be determined by all partners in the endeavor.

Content of the education for teachers provided during this initial induction period logically should include studies which help to develop an understanding of generalized principles first introduced during the preservice program. The individual's capacity to apply generic learning in a specific community and school setting with particular children is tested. In fact, developing such application skills and evaluating the candidate's ability to apply them effectively are the major functions of this year of induction. The partners coordinating this experience also share the responsibility for evaluating the success of candidates at meeting this charge. Evaluation during this first year should be more formative than summative, but emphasis upon summative evaluation should be increased thereafter.

The second stage of induction, continuing induction, is comparable to what currently is considered full professional employment. The inducted teacher assumes full responsibility to apply the knowledge and skills crucial to a particular role in a specific setting. Support is still available from a variety of sources, but direct support decreases and professional responsibility increases.

Formal education, too, would continue. Teachers would be guided to understand the particular society of a given school: the idiosyncracies of the school's social, political, and administrative system; the realistic expectations of its students; the personal and human resources, management control, and reward systems; the demands of its curriculum; and the efficacy of instruction procedures. A thorough and sustained examination of factors intrinsic to teaching in a chosen setting would be emphasized. Teachers would be led to assume multiple roles, and thus the content of teacher education at this stage must not only become preoccupied with only the teaching or instructional role. Skills related to planning, classroom management, and evaluation are also critical. (Smith, 1980) Effective teaching, after all, requires the mastery of more than a few general approaches. (Brophy, 1976)

Induction leads the teacher from relative dependence to relative independence. Hence the years beyond the first are spent in a conventional setting with normal administrative support. During this second stage, evaluation occurs by district personnel and also by the professional educators who ultimately will be responsible for recommending the candidate to the state Department of Education. At the end of the probationary period, with the recommendation of peers, the Commonwealth would certify the individual as a professional educator. No clear suggestion for the most appropriate length of time for this second stage of induction can be garnered from current research, but it seems inappropriate to reduce it below the current three years.

More important than time is the specification by the profession, in collaborative effort with all sectors of the professional education community, of a set of criteria upon which the profession will base its recommendation decision. Because unilateral generation of such criteria would be inconsistent with the philosophy of this proposal, no attempt will be made to do so here.

However, to reduce present criteria would seem to retreat from present status to something less than professional.

In order to facilitate development of these or additional competencies, it would be expected that existing mechanisms for formal and informal inservice and graduate teacher education would be utilized. Again, specific requirements should be collaboratively established. One position, however, is that concern for teacher growth and professional pride would favor completion of an advanced degree in an area which complements the teaching area(s) or level(s) of concern.

Retention prerogatives for the purposes of employment would continue to reside with local district administrators and supervisors. The need to periodically renew one's certification is described below.

Continuing Professional Development

Smith and Orlosky draw a distinction between inservice education and continuing professional development. To them, inservice education is

> any training of school personnel to prepare them to satisfy a need of the school system. The skills and concepts comprising the substance of the training program are determined by the deficiencies in the instructional, administrative, and support systems of the school. [Continuing professional development] in contrast, consists of experiences and studies to satisfy the personal needs of the school personnel. Its character is determined not by the deficiencies of the system, but by the interest of each individual in his own personal and professional development and career advancement. (1975,180)

PALACAT adopts these definitions, but includes both inservice education and continuing professional development in its proposals for the final stage of professional growth. Although inservice education begins during the two stages of induction, and in fact is the primary concern of these stages, it must continue throughout the entire lives of all professionals in education. Developments

such as societal changes, adjustments in expectations, and legal mandates do not come to a halt when the induction phase is complete. Instead, such developments are never-ending and necessitate the continuous preparation of professionals to meet the needs of schools as determined by their deficiencies.

Continuing professional development, as defined by Smith and Orlosky, also is crucial to any vital human being. Personal curiosity, the need to know, and personal ambition, the need to grow, should provide the motivation for this stage of development. Correcting self-assessed deficiencies, retraining for new assignments, seeking professional advancement or promotion, or learning simply for its own value are examples of this type of continuing professional development.

Based on its broad definition of continuing professional development, PALACAT proposes that certification should no longer be considered a lifelong license to teach. That is, permanent certification seems unrealistic. The need to address the deficiencies of the workplace, the need to know, and the need to grow suggest that some form of periodic renewal of certification is required. Such updating would result from seminars, workshops, travel, graduate study, and the like using appropriate instructors and locations. Professionals from basic and higher education and other qualified personnel would provide this study according to their expertise and experience.

No length of time or units of additional education are specified here. Patterns already adopted by other professions, though, perhaps offer some guidance. However, the criteria that the development be planned, reviewed, and evaluated on a systematic basis seems necessary for professional growth. Whatever the decision regarding the length of time is, it should be one that is cooperatively developed by all involved in the profession.

Recertification or professional renewal should not be limited, however, to classroom teachers at the basic education level. All professionals in education -- K-12 practicing professionals, district administrators and supervisors, intermediate unit personnel, state officials, and college and university faculty,

administrators, and supervisors -- should be expected and required to participate in this type of continuing professional development in order to remain vital members of the profession.

Summary

Denemark has put it well when he says,

> Teachers need to know, to do, and to be. They need conceptual knowledge to explain the relationships between events, actions, and things; but beyond 'knowing about,' teachers need to 'know how.' Both are necessary to effective teaching. An appropriate blend of knowing the principles underlying good teaching and possessing the skills for implementing those principles is essential. But 'knowing how' is in turn subject to the qualification 'how well?' 'Knowing how to do something is one thing, knowing how to do it well is... another, and doing it brilliantly is still a third' (Scheffer, 1965, 95-96). Our training programs must enable all teachers to 'do it well' while encouraging many teachers to 'do it brilliantly.'
>
> Beyond the demands of knowledge and skill is the ultimate expectation that teachers [at all levels] become models or mentors for those they instruct. They must exemplify in their behavior the qualities they seek to engender in others. This expectation is nowhere more legitimate than in the process of teacher preparation. (1980, 33)

The preparation of professional educators for a lifetime of effective, if not brilliant, service requires:

1. A strong undergraduate base of foundational studies blended with field experiences and offered through flexible and creative teacher education programs defined by program approval standards but unencumbered by the specification of an endless list of technical tasks.
2. A closely supervised one year period of initial induction into the profession, planned, implemented, and evaluated by all professionals in education and set in a controlled and supportive

environment which will allow neophyte teachers to make the transition from student to full professional status.

3. A period of continuing induction which enables teachers to develop the knowledge, skills, attitudes, and beliefs necessary for independence in a school setting.
4. An ongoing program of inservice education and continuing professional development which is planned and systematic and which is reviewed and evaluated on a periodic basis.

CONCLUSION

The Pennsylvania Association of Liberal Arts Colleges for the Advancement of Teaching has a long and rich history of involvement in teacher education in the Commonwealth. In the fifty years since PALACAT was organized, institutions belonging to the Association have witnessed and experienced many changes in the process followed to prepare teachers both for initial and continuing service. Some of these changes have been embraced warmly; others have received a much cooler reception. In preparing this paper, PALACAT has taken the current interest to reconsider the design of teacher education quite seriously.

Institutions comprising PALACAT are proud of the product of their diverse teacher education programs; they feel they have served and protected with distinction the needs and interests of the Commonwealth as well as the legitimate needs and interests of students enrolled in their programs. The Association recognizes, however, that even good programs can be made better. Further, it is keenly aware of the need to develop cooperation and mutual trust among all involved in the initial and continuing preparation of teachers -- cooperation and trust based on an understanding of each group's philosophical and practical needs. Additionally, PALACAT realizes that those of us in Pennsylvania do not have to reinvent the teacher education wheel; the professional wisdom, scholarly opinion, and experience of professionals in education from across the country and beyond are available for our logical analysis. Finally, the Association knows that any effort toward change needs a starting point, a place to begin discussion.

It was the purpose of this paper to address these issues. That is, the assumptions undergirding the PALACAT position were presented, in order to

clarify the foundation from which at least one group is working; current practice and the role of research in teacher education were analyzed, drawing upon the most authoritative sources the Association could locate; suggestions were made to increase the level of communication, cooperation, and trust among the various groups involved in teacher education; and proposals for change were advanced as a means for beginning the dialogue.

REFERENCES

Alverno Faculty. Liberal Learning at Alverno College. Milwaukee, Wisc.: Alverno Productions, 1976.

Apple, Michael and Walter Feinberg. "The Dangers of Deskilling Teacher Education." AESA News and Comment, Vol. 11, No. 3 (June, 1980).

Barr, Rebecca and Robert Dreeben. "Instruction in Classrooms." In Lee S. Shulman (Ed.) Review of Research in Education, 5 (AERA). Itasca, Ill: F. E. Peacock, 1977.

Bennett, John B. "Liberal Education: Why?" Liberal Education 63 (1) March, 1977.

Brophy, J. and Evertson, C. Learning from Teaching: A Developmental Perspective. Boston: Allyn and Bacon, 1976.

Centra, John A. and David A. Potter. "School and Teacher Effects: An Interrelational Model." Review of Educational Research (AERA). Vol. 50, No. 2 (Summer, 1980).

Confederation of Pennsylvania Association for Teacher Education (CPATE). Teacher Education: Guidelines for a Master Plan. 1979.

Cremin, Lawrence A. The Education of the Educating Professions. Washington, D.C.: AACTE, 1978.

Denemark, G. W. and J. B. McDonald. "Perservice and Inservice Education of Teachers." Review of Educational Research, 1976, 37, 233-247.

Denemark, George and Norma Nutter. The Case for Extended Programs of Initial Teacher Preparation. Washington: ERIC Clearing House on Teacher Education, 1980.

Egbert, Robert L. "Excellence in Education," Journal of Teacher Education. 31 (2), 1980.

Fenstermacher, G. D. "What Needs to Be Known About What Teachers Need to Know" in Exploring Issues in Teacher Education: Questions for Future Research. Gene E. Hall (Ed.). Austin, Texas: Research and Development Center for Teacher Education, 1980.

Fenstermacher, Gary D. "A Philosophical Consideration of Recent Research on Teacher Effectiveness." In Shulman Lee S. (Ed.) Review of Research in Education, Vol. 6, Itasca, Ill: F. E. Peacock Publishers, 1979.

Fuller, Frances F. and Oliver Bown. "Becoming a Teacher" in Teacher Education. The Seventy-fourth Yearbook of the National Society for the Study of Education, 1974.

Giles, Frederic T. Schools of Education: An Investment in the Present and Future. Washington, D.C.: AACTE, 1979.

Green, Thomas F. Work, Leisure, and the American Schools, New York: Random House.

Hazard, William R. et al. Legal Issues in Teacher Preparation and Certification, Washington, D.C.: ERIC Clearinghouse on Teacher Education, 1977.

"Help! Teachers Can't Teach!" Time, June 16, 1980, 54-63.

Howsam, Robert B. et al., Educating a Profession. Washington, D.C., American Association of Colleges for Teacher Education, 1976.

Hurn, Christopher J. "The Re-emergence of Liberal Education." Change, 10 (9) October, 1978.

Kemble, Eugenia et al. Viewpoints of Two Teacher Organizations PBTE, ERIC ED 111 770. Washington, C.D.: AACTE, September, 1975.

Kliebard, Herbert M. "The Question in Teacher Education." In McCarty, Donald J. (Ed) New Perspectives on Teacher Education. San Francisco: Jossey-Bass, 1973.

MacEoin, Gary, "Notre Dame's Father Hesburgh," Change 8 (1) February 1976: 46-51 and 70.

Medley, Donald M. and Harold E. Mitzel. "The Scientific Study of Teacher Education." In Bellack, Arno A. (Ed.). Theory and Research in Education, New York: Teachers College Press, 1963.

Peck, Robert F. and James A. Tucker. "Research on Teacher Education." In Robert M. W. Travers (Ed.). Second Handbook of Research on Teaching (AERA) Chicago: Rand McNally, 1973.

Ryan, Kevin. "Inside the Black Boxes: The Process of Teacher Education" in Exploring Issues in Teacher Education: Questions for Future Research. Gene E. Hall (Ed.) Austin, Texas: Research and Development Center for Teacher Education, 1980.

Ryan, Kevin A. (Ed.) Teacher Education. The Seventy-fourth Yearbook of the National Society for the Study of Education, 1974.

Ryan, Thomas. "A Conceptual Framework for Teacher Preparation and Professional Development in Michigan," unpublished manuscript. Western Michigan University, 1979.

Scheffer, Israel. Conditions o Knowledge: An Introduction to Epistemology and Education. Chicago: Scott-Foresman, 1965.

Shavelson, Richard and Nancy Dempsey-Atwood. "Generalizability of Measures of Teaching Behavior." Review of Educational Research (AERA). Vol. 46, No. 4 (Fall 1976).

Smith, B. O. "On the Content of Teacher Education," in Exploring Issues in Teacher Education: Questions for Future Research. Austin, Texas: Research and Development Center for Teacher Education, 1980.

Smith, B. O., Saul B. Cohen and Arthur Pearl. Teachers for the Real World. Washington, D.C.: American Association of Colleges for Teacher Education, 1969.

Smith, B. O. and D. Orlosky. Socialization and Schooling: The Basics of Reform. Bloomington, Ind.: Phi Delta Kappa, 1975.

Smith, B. O. and Stuart Silberman. Unpublished manuscripts on teacher preparation, 1979.

Tisher, R. P. "Teacher Induction: An Aspect of the Education and Professional Development of Teachers" in Exploring Issues in Teacher Education: Questions for Future Research, 1980.

Wallace, R. C. Jr. "The Influence of Selected Context Variables on Schooling" in Exploring Issues in Teacher Education: Questions for Future Research. Gene E. Hall (Ed.). Austin, Texas: Research and Development Center for Teacher Education, 1980.

APPENDIX A: SUMMARIES OF RESEARCH

Research reviews clearly describe the problems inherent in the empirical base for teacher education. Five reviews are summarized below.

Donald M. Medley and Harold E. Mitzel. "The Scientific Study of Teacher Behavior." In Bellack, Arno A. (Ed.). Theory and Research in Education. New York: Teachers College Press, 1963, 79-80.

Although written some time ago, this review is of continued importance. The purpose of the study by Medley and Mitzel was to identify effective patterns of teacher behavior in order to teach those patterns to education students so that they might exhibit them in the classroom. "If teaching is not a science, then it must be an art -- that is, a skill possessed only by teachers who either were born that way, or have been lucky enough to stumble on its secrets by chance. Without definite knowledge of the nature of effective teaching, it is impossible either to identify and recruit those young people born with this talent, or to make successful teachers out of young people born without it." (81)

Medley and Mitzel maintain that "very few of the things teachers do in classrooms today are done because they have been demonstrated scientifically to be effective ways of behaving." (82)

Relatively few scientific studies have been conducted that deal with the nature of effective teacher behavior. Medley and Mitzel claim that there are only about forty research reports germane to this idea. They cite two problems as the cause: (1) the problem of measuring teacher effectiveness and (2) the problem of measuring teacher behavior.

With regard to the problem of measuring teacher effectiveness, Medley and Mitzel conclude that what is involved in the measurement will, itself, suggest why ratings of effectiveness lack validity. That is, the belief that an observer can judge a teacher's effectiveness must be based on the idea that by noting the extent to which the teacher behaves in ways known to be effective (or ineffective), the observer can form judgment of the effect the teacher will probably have on pupils. "In other words, the validity of judgmental criteria of teacher effectiveness depends on the assumption that the science of teacher behavior already exists, and studies using such criteria can hardly be expected to contribute much to the birth of the science." (85)

With regard to the problem of measuring teacher behavior, Medley and Mitzel state that because behaviors are seldom identical in all observable respects, what would seem to be the same behavior can be quite different in impact according to who exhibits it. Any given behavior does not have the same effect on every pupil every time it occurs.

Robert F. Peck and James A. Tucker. "Research on Teacher Education." In Robert M. W. Travers (Ed.). Second Handbook of Research on Teaching (AERA). Chicago: Rand McNally, 1973, 940-978.

The purpose of the Peck and Tucker article is to review the strengths and weaknesses of the methods used in studies of teacher education. In 1964, R. O. Collier, Jr. reviewed these strengths and weaknesses and noted that very few studies were experimental in nature. In the same year, F. R. Cyphert and E. Spaights came to essentially the same conclusion. Writing in 1967, G. W. Denemark and J. B. McDonald found research on teacher education to be "extremely scanty, and in many areas nonexistent." (940)

Peck and Tucker state that with regard to "the literature for the period 1955-1971, we found all too many examples, still, of inadequate research design or inadequate reporting." (941)

Available research appears according to Peck and Turner to demonstrate the following:

(1) "A 'systems' approach to teacher education, often called 'instructional design', substantially improves its effectiveness." (943)

(2) "Teacher educators should practice what they preach." (943)

(3) "Direct involvement in the role to be learned, or such close approximations as sensitivity training laboratories or classroom simulation laboratories, produces the desired teaching behavior more effectively than remote or abstract experiences such as lectures on instructional theory." (943)

(4) "Using any or all of the techniques just mentioned, it is possible to induce a more self-initiated, self-directed, effective pattern of learning, not only in teachers but, through them, in their pupils." (943)

(5) "Traditional ways of educating teachers have some of the intended effects, but they also have some quite undesired effects." (943)

(6) "The training of teacher educators is a current concern at numerous places in the United States." (943)

(7) "One long-needed methodological advance is beginning to appear in the research: the use of pupil-gain measures as the ultimate criteria of the effectiveness of any given process of teacher education." (943)

Peck and Tucker conclude that an improved quality of research should make possible a growth in the funding for educational research and development. The

theoretical principles, operational measure and developmental technology for a performance-based method of appraising teachers is in sight. "A great deal of research remains to be done to discover additional theoretical principles which would lead to more effective training." (971)

Richard Shavelson and Nancy Dempsey-Atwood. "Generalizability of Measures of Teaching Behavior." Review of Educational Research (AERA), Vol. 46, No 4 (Fall, 1976), pp. 553-611.

Shavelson and Dempsey-Atwood offer that recent research on teaching has followed two lines of inquiry. One is the criterion of effectiveness paradigm, and the other is the teaching process paradigm. The criterion of effectiveness paradigm uses pupil outcomes - usually achievement - as a measure of teacher effectiveness. In contrast the teaching process paradigm focuses on various aspects of teacher and student behavior judged to be worthwhile in their own right or linked to student achievement in previous research. It is the authors' opinion that consistent, replicable features of teaching which lead to valued student outcomes have not been identified by either paradigm. Teacher effects on pupil outcomes are unstable based on conclusions from research on teaching. Conclusions from research also indicate that teaching acts themselves are unstable and that most teaching acts are unrelated to student outcomes.

Some explanations for those conclusions follow:
(1) typical measures of teacher effectiveness (students' mean achievement) are unstable. (2) measures of teacher behavior (teachers' use of verbal reinforcement) are unstable. (3) the stability of behavioral measurement used in most research has not been adequately examined or established:

> A prime example of generalization is studies in which observations of teachers' verbal reinforcements obtained at some point in time are correlated to student achievement at the end of the course. Although it is possible to consistently rank order teacher performance at one point in time (interrater reliability), it is an empirical question as to whether this rank ordering is stable (generalizes) over teaching settings. (554)

Shavelson and Dempsey-Atwood address the issue of the stability of teacher effectiveness measures of teacher behavior. Their conceptual framework is that of generalizability theory. This theory suggests that the extent of generalization depends on the facets (raters, occasions, subject matters) over which the generalization is made. Therefore, in addition to examining studies dealing with the stability of measures of teacher behavior, Shavelson and Dempsey-Atwood describe studies that systematically varied facets in order to determine the effect of these facets on a teacher's behavior (studies of the generalizability of measures of teacher behavior).

Their conclusion with regard to these latter studies and those that have been reported is that they "focus either on an opposition of how generalizability theory can be applied to the measurement of teacher behavior or do not make full use of the data available to provide estimates of variance components needed to calculate generalizability coefficients and other indices of the generalizability of measures of teacher behavior." (558)

Based upon an examination of eleven studies, Shavelson and Dempsey-Atwood suggest that generalizability may be extremely limited in an educational context. They conclude that: (1) "Of all the measures of teacher behavior examined, global ratings appear to be the most stable." (2) "Four clusters of teacher behavior variables based on other measures appeared moderately stable over variations in facets: teacher presentation, positive and neutral feedback, probing, and direct teacher control (classroom management." (3) "... some variables were stable and some were unstable...: presentation of content, teacher

motivational skill, expressive teaching style, affective style, classroom administration, and teacher individualization." (4) "Some variables... appeared unstable: teacher questioning, negative feedback, interpersonal behavior, following procedures, and i 'irect teacher control (classroom management)." (5) Most studies are methodologically inadequate to resolve the issue of "whether the absence of clear, replicable relationships between teacher behavior and student outcomes was due to measurement problems or problems in conceptualization." Findings are equivocal (with only a few exceptions) on the generalizability and stability of measures of teacher behavior. And "a systematic effort should be made to resolve the measurement issue." (608-609)

Rebecca Barr and Robert Dreeben. "Instruction in Classrooms." In Lee S. Shulman (Ed.). Review of Research in Education, 5 (AERA). Itasca, Ill.: F. E. Peacock, 1977, 89-162.

Barr and Dreeben state that there are two traditions of research on school effects: (1) a classroom instruction tradition consisting of a "large and inconclusive literature on the impact of instruction upon learning" (89) (2) a tradition dating to the Coleman Report of 1966 which examines school effects using a quasi-production function formulation to study the connections between school resource and achievement. Barr and Dreeben argue that the two traditions, which often remain in complete isolation from one another, have a connection, that the "agenda addressed by one is integral to the agenda addressed by the other." (89)

They conclude, after reviewing numerous related studies, that a major contribution of the production function formulation is to "shift concern away from the productiveness of any single level within an organization and toward the

interrelationships among levels by enquiring about organizational productivity." (151) With regard to production function analysis, a major contribution to understanding school effects is its general concern with the properties of school districts and school organization and their impact upon learning. "Despite the limitations of this approach, it locates the process of schooling in a broad social setting and pays particular attention to those financial, human, and material resources and their allocation that bear upon the schooling process." (151)

According to Barr and Dreeben, examination of the classroom literature proves to be of little value in understanding the events and activities within classrooms which transform resources into products, or how these events relate to activities within other levels of the school organization. Two characteristics of classroom research, they assert, limit its usefulness: the tendency to examine only a portion of the events occurring within classes, ignoring others which may bear on the productive process, and the tendency to ignore the contextual properties of classrooms.

The second inadequacy of research for providing the basis for a new model of teacher education is that even if one knew what made for effective teaching practice this would not provide a basis for what must be done to teach teachers to be effective.

John A Centra and David A. Potter. "School and Teacher Effects: An Interrelational Model" Review of Educational Research (AERA). Vol. 50, No. 2 (Summer, 1980), pp. 273-291.

This review, an adaptation of one prepared for Research for Better Schools, Inc., examines a model for investigating school and teacher variables which influence student achievement. Variables are grouped as: (1) school or school

district conditions (2) within school conditions (3) teacher characteristics (4) teaching behavior (5) student characteristics (6) student behavior and (7) student learning outcomes.

Centra and Potter offer that: "Many factors affect student learning, including parents, peers, teachers, schools, and, most of all, students themselves. No single study has adequately investigated the influence of all these factors. And given the data collection and methodological problems entailed, there probably never will be a single research project that will look adequately at the interrelations and effects of each of these influences." (273)

With regard to school factors, Centra and Potter conclude that (1) "Between-school studies have not been successful in identifying school (or district) characteristics that are highly related to how much students learn." (281) (2) "Although schools apparently do make some difference, most of the variability in student achievement is related to student social class or to within-school factors." (281)

With regard to studies on teacher behavior, Centra and Potter conclude that "more research is clearly needed." (281) This state of affairs is, they suggest, attributable to three factors: (1) Research on teaching has been unsystematic. (2) Research on teaching has been conceptually impoverished. (3) Research on teaching has been methodologically unsophisticated.

With regard to student behavior and student achievement, Centra and Potter conclude that "what little research there is seems to support the anticipated causal relationship between student behavior and achievement." (288)