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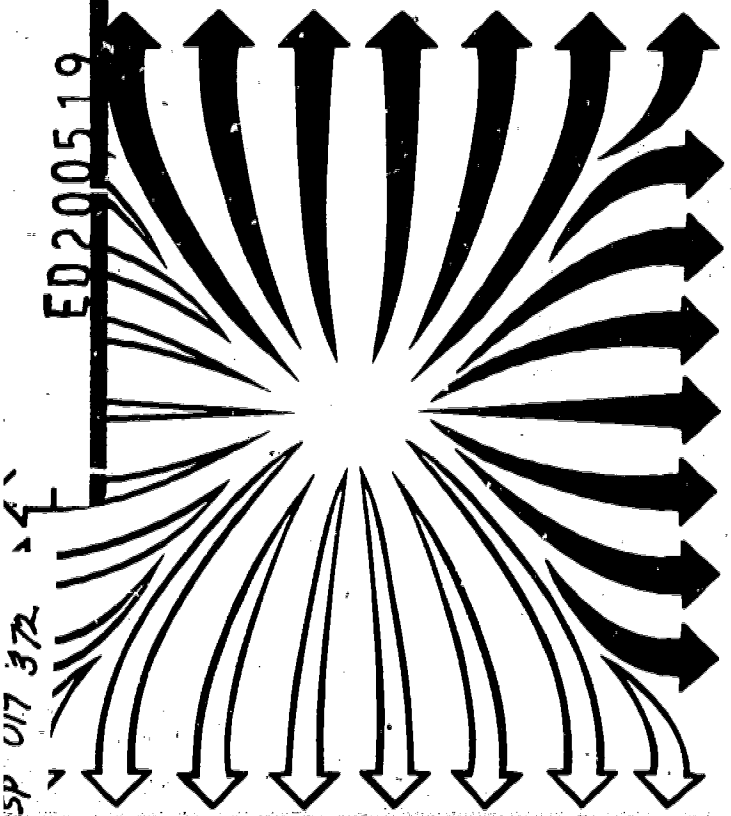
ABSTRACT

The experience of the University of Houston in evaluating its teacher education program and in conducting followup studies of its graduates is recounted. A description is given of the problems encountered in planning, developing, and implementing a competency based program, and the subsequent evaluation procedures used to validate the program. The gradual evolution of a methodology for conducting follow-up studies is described, and insights gleaned from two successful follow-up studies are discussed. Suggestions are offered for determining the salient points upon which program evaluation should be based. The appendixes include a list of the twelve characteristics of Houston's competency based teacher education program, and the sixteen generic teaching competencies adopted for the program. (JD)

Reflections on the Evaluation of a Teacher Education Program



Current Issues

REFLECTIONS ON THE EVALUATION OF A TEACHER EDUCATION PROGRAM:

THE UNIVERSITY OF HOUSTON EXPERIENCE

by

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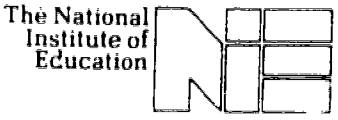

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FOREWORD

Schools, colleges, and departments of education everywhere must cope with the problems of evaluating their programs, particularly if they plan to seek or renew accreditation. Included in those evaluations must be the monumental task of finding out whether program graduates are performing effectively on the job.

While the literature in program evaluation implies that such a process is a systematic, incremental one, practice is very different. The current monograph grows out of several discussions related to the most recent phase of the University of Houston's efforts to assess their teacher education program. The scope of the manuscript was broadened to consider the more general issue: Why is it so difficult to obtain reliable, valid evaluation data on a teacher preparation program?

After several letters and phone conversations, the authors agreed to chronicle their efforts to evaluate the University of Houston's 10-year-old competency-based teacher education program and to track the progress of its graduates. The final publication describes the authors' plan of action and the problems they faced in trying to set up a workable program and make revisions to its operations on the basis of often imprecise evaluation data. The purpose of this publication is to increase the awareness of teacher educators in other institutions so that they might possibly avoid many of the problems that plagued the Houston team.

We gratefully acknowledge the professional contributions of the Houston team--Drs. B. Dell Felder, Loye Y. Hollis, and W. Robert Houston--all of whom are on the faculty of the College of Education at the University of Houston. We would also like to thank our content reviewers, whose comments were invaluable in improving the manuscript.

Readers are invited and encouraged to comment on this monograph and to submit related documents to the

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EVALUATION: THE HOUSTON EXPERIENCE

Almost a decade ago when the design for CBTE was still on the drawing board, the College of Education of the University of Houston began its competency-based teacher education program. Although there was hope that a competency-based approach would offer improvements over conventional methods for preparing teachers, no one knew much about how to develop, operate, or evaluate such a program. Problems still exist and some issues have yet to be resolved, but Houston's undergraduate CBTE program is established and operating.

Efforts to evaluate this CBTE program have proven both difficult and costly, and many lessons have been learned along the way. The need for systematic evaluation of teacher education efforts is widely acknowledged, although research has shown that few institutions have succeeded in evaluating their teacher preparation programs or conducting follow-up studies of their graduates. During the spring of 1978, the University of Texas Research and Development Center and the National Institute of Education attempted to report what was known and understood about designing and conducting teacher education program evaluation and follow-up studies. They contacted teacher educators nationwide to identify institutions engaged in this effort. Much to their disappointment, they "were unable to unearth a large number of institutions where there has been a serious commitment to conducting these studies" (Hord and Hall 1978). Those institutions that have been engaged in such program evaluations have approached the task quite differently (Hord and Hall 1978; Cooper et al. 1980), thus making it difficult to relate their efforts in meaningful ways and learn from each other.

In this monograph, the experience of the University of Houston to evaluate its teacher education program and to conduct follow-up studies of its graduates will be shared. The account includes a short discussion of the findings from the last two follow-up studies, and the authors' reflections on evaluations and follow-up studies. This brief account is intended to shed some light on a complex subject, insight that might prove helpful to others contemplating or conducting teacher evaluation studies. The paper is not intended as an evaluation report of Houston's CBTE program.

Working Up To Evaluation

Improvement of teacher preparation was the impetus for developing CBTE at the University of Houston. While the crucial role of evaluation was recognized from the outset, it was several years before the program was sufficiently developed to permit substantive evaluation.

The first experimental CBTE program was launched in 1971 and involved 64 students. The following year, a second pilot program involved 121 students. With encouraging results, the faculty voted in spring 1973 to use a competency-based approach in all undergraduate programs of the College of Education. During the 1973-74 school year, all entering undergraduates participated in the new CBTE program.

During that first year, several problems arose, the resolutions of which required most of the next year and resulted in major modifications to the program's design. This caused a two-year delay in development of a comprehensive plan for program evaluation.

The students in the pilot program had volunteered to participate and expected a nontraditional program. When the program was expanded to include every student, many of the new participants encountered difficulties with the less traditional modes of instruction. They would often take the course of least resistance or complain because instructors were not clear about expectations.

Four instructional teams, each consisting of four professors and a counselor, were created to coordinate

the program. Each team was assigned to work with a group of students who, with their professors, were to remain together for the duration of the two-year preparation program.

Although the program remained within the state-approved teacher certification course structure, it was designed to be an individualized, highly personal experience for students. Arrangements were made with the University of Texas Research and Development Center to use the instruments and processes pioneered by Frances Fuller (1969) to identify the concerns of preservice teachers. Group process sessions and individual testing and counseling provided students with continuous feedback about themselves and their performance in the program. Students were given options on how they would achieve their objectives and were expected to negotiate the specifics of their program with professors.

Among the faculty, a philosophical difference of opinion arose regarding who decides the competencies required for entry into the profession. Some faculty believed that students should discover for themselves the specific objectives for competencies associated with effective teaching. Intensive group and individual counseling and close association with a practicing teacher in the field were scheduled to assist students to do this. Other faculty thought that the competencies required for certification should be decided by the faculty and that certain instructional objectives should be common for all students while others could be negotiated. Although this faculty group supported the idea of alternative learning activities, they believed program objectives should be clearly specified and made public in advance of instruction.

As structured, the program required a great deal of faculty time. Establishing objectives with individual students, designing instructional activities, evaluating performance, arranging for field-based experiences, and meeting with team members were time consuming. Some faculty questioned whether teaching in the program would permit them to survive in a "publish or perish" academic world. Also, although committed to the innovation, many faculty members did not have the experience or insight

of those who had developed the original program design, and sometimes they would adjust their courses in ways that were at variance with the intent of the CBTE program model.

The program had a strong field-based component where another problem emerged. In the pilot programs, each student visited at least three teachers during the first semester and selected one to serve as a cooperating teacher for the two-year period. Student teaching was to be done with this teacher. The problem was that more than 500 undergraduate students entered the program each semester in 1973-74. As each of these students visited three teachers in the schools and selected one to serve as a mentor, many of the nearly 3,000 classroom teachers in Houston began to complain that they were being evaluated by undergraduate students. This became an unresolvable problem. The choice was to modify the program or lose the cooperation of the public schools. The decision was made to assign students to cooperating teachers, thus eliminating student selection.

These problems made it apparent that the experimental program was not a feasible design for collegewide implementation. As a result, the College Undergraduate Studies Committee formed a CBTE Task Force in spring 1974 to revise the program design and recommend a mangaement system for its operation.

Until this time, responsibility for managing the program had been shared among department chairs, associate deans, and key faculty who held leadership positions in the experimental projects. Because roles were not always clear, some problems tended to get too much attention from too many people while other problems seemed to be overlooked or ignored because everyone assumed that "somebody else was taking care of it." The CBTE Task Force recommended creating an administrative unit called the Professional Teacher Preparation Program (PTPP) to operate outside the departmental organizational structure. This new administrative unit reflected the view that the program should be an instructional system--an integrated whole--and as such was the responsibility of the College of Education, and not of individuals. A PTPP director, working with a

management team called the Program Development and Implementation Council (PDIC), was assigned responsibility for administering the program. The PDIC subsequently played a major role in coordinating program development and evaluation.

In revising the design for the program, the CBTE Task Force assumed that the most important and valid competencies of teachers could be specified and assessed, and that these competencies could be learned and demonstrated through properly designed instructional systems. As a first step, the task force derived the characteristics of the desired teacher preparation program, subsequently approved by the College faculty to give direction for program development and serve as indices for implementation. The 12 characteristics are listed in Appendix A.

Throughout 1974-75, an extensive effort involving many faculty was underway to identify and approve generic teaching competencies that all students would be required to demonstrate for certification as teachers. Once approved by the faculty, these competency statements were used to identify instructional objectives, design instructional materials, and evaluate performance. They were also used in program effectiveness studies and they provided a basis for work toward a valid, reliable instrument to measure competency demonstration. The 16 competencies are listed in Appendix B.

The revised CBTE program at Houston was put into use during the 1975-76 school year. The first students to complete this program were graduated in the spring of 1977, which was the target for initiating a systematic evaluation of the program.

Evaluation

Recognizing that systematic revision is necessary to refine components and respond to changing needs, the PDIC agreed from the outset that program decisions should be made on the basis of systematically collected and analyzed information. This commitment, as well as the desires to validate teaching competencies and assess

the quality of program graduates, resulted in the creation of a Research Task Force. Appointed by the PDIC in 1975, it was charged with developing and implementing evaluation and follow-up studies of the program and its graduates.

All members of the Research Task Force had been involved with program development, but none was an expert in program evaluation. Similar work at the Oregon College of Education in Monmouth, Ore., attracted the group's attention and arrangements were made for them to visit and review evaluation efforts at that institution. During the visit, the first hint of problems to come became apparent. H. Del Shalock and his associates described the difficulties they encountered at Oregon--faculty apprehensions regarding the evaluation process, their indifference to evaluation data, problems of locating and following graduates during their first years of teaching, and the costs of conducting studies. Despite these discouraging notes, the Houston team was impressed and returned to set about the task of designing evaluation studies for their program. Four kinds of studies were envisioned:

1. Program evaluation studies to determine the extent to which conceptualized elements or characteristics of the program were operational in the training system, and the utility and sufficiency of these program components as perceived by preservice teachers, program graduates, and others.

2. Program effectiveness studies to determine the extent to which graduates acquired the competencies.

3. Program validation studies to establish that program competencies were positively related to pupil achievement.

4. User satisfaction studies to assess the attitudes of graduates and their employing institutions toward the program's outcomes.

The task force agreed that the evaluation process should:

1. Provide information which would be used to support the instructional system's efforts to facilitate student competency attainment.

2. Provide information concernng student progress, student achievement, and program effectiveness.

3. Provide information which would be useful in promoting closer and more productive communication with students.

4. Provide information which would be responsive to the expressed data needs of faculty who were implementing the program.

5. Provide data which were timely, easily obtained, and credible.

6. Provide an information base for decision-making related to program revision. (Cooper and Weber 1977)

Because all of the events connected with the University of Houston's efforts to evaluate its teacher preparation program are not described in detail here, an overview of these activities is presented in table 1.

When the first graduates of the revised program were in their last semester, it seemed especially important to determine the extent to which the program was, or was becoming, what it intended to be. The program was evaluated in spring 1977 to see if it had the characteristics approved by the faculty; that is, to what extent was the program competency-based? James M. Cooper and Wilford A. Weber, who designed and conducted the study, described its salient features:

> First, program designers had spent considerable effort to conceptualize and specify the instructional system

TABLE 1

CALENDAR OF EVENTS

1973-74: CBTE adopted collegewide at undergraduate level.
1974-75: CBTE program extensively revised; new organizational structure created.
SPRING 1975: Research Task Force appointed.
SPRING 1977: First students to complete revised two year-program are graduated.
SPRING 1977: First program evaluation study conducted.
SPRING 1977: Student teacher success and competency validation study conducted.
SPRING 1977: Study of the affective characteristics of undergraduate students conducted.
SPRING 1977: First follow-up study of program graduates conducted.
FALL 1977: Performance Evaluation Instrument Committee established.
SPRING 1978: Telephone contact with graduates to devise more effective follow-up methodology.
SPRING 1978: Second program evaluation study data collected.
SPRING 1979: Second follow-up study conducted (Spring 1978 graduates).
SPRING-FALL 1979: Third follow-up study conducted (Spring 1979: graduates).
SPRING 1979: Comparison of Performance Evaluation Instrument and National Teacher Examination for evaluation of student teaching performance.
SUMMER 1979: Change in College administration.
SUMMER-FALL 1980: Fourth follow-up study conducted (Spring 1980 graduates).

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characteristics they believe were essential to program effectiveness, and it appeared to be of benefit to determine the extent to which they were successful in operationalizing their

conceptualization. Second, while much had been written and said about competency-based teacher education, it appeared that few competency-based teacher education programs existed. Indeed, there were educators who seemed to express doubts concerning the viability of creating such programs. It was assumed that there was benefit to be gained by testing that assumption. Third, if anything was to be said about the program's effectiveness with regard to its ability to facilitate student competence, it seemed quite essential that the nature of that program's instructional system be thoroughly described and understood. Fourth, if the program was to be improved, there was a crucial need for information about the nature of its instructional system. (Cooper and Weber 1977)

Indicators were generated and approved for each of the 12 program characteristics. Questionnaires using a nine-point Likert rating scale were designed to collect perceptual data from students, faculty, and school-based teacher educators. Program documents and policy statements were identified and collected along with copies of all instructional modules and materials. A checklist was developed to analyze these documents and instructional materials to determine whether they were indicators of approved program characteristics.

Completed questionnaires were received from 309 students in the pre-student-teaching phase of the program; 191 student teachers; 22 university supervisors of student teachers; and 223 school-based teacher educators, who worked with students in the field component. The summary data indicated "that all four groups generally agreed that all 12 program characteristics were present" (Cooper and Weber 1977).

The document analysis findings suggested that certain program characteristics had not been carried out to the extent the questionnaire data indicated. It was decided that program assumptions needed to be examined for the purpose of reaffirming, modifying, or deleting them. Also, efforts were intensified to make sure that

all faculty members understood how the instructional system characteristics they had adopted should be reflected in every aspect of the CBTE program's operation. Specific problems in program operation were singled out for correction. For example, an inconsistency in format for training modules was creating confusion among students; a task force was appointed to study the problem, and its recommendation of one format was adopted.

Three other studies were conducted during that spring semester, all important early steps toward judging and validating program effectiveness. One study, by Howard L. Jones and Robert S. Randall, asked students how successful they thought they had been in using the program's generic teaching competencies and how important these skills are to effective teaching. Indicators to assess perceptions were developed for each generic competency and a five-point Likert rating scale was designed to gather data. Using the same questionnaire, university supervisors and school-based teacher educators rated the importance of the competency indicators to effective teaching, and judged the performance success of student teachers they had supervised during the semester. Responses were obtained from 191 student teachers, 22 university supervisors, and 223 school-based teacher educators.

Respondents generally agreed on the importance of the competency indicators to effective teaching, and student teachers were judged to be performing those competencies successfully in the classroom. The student teachers rated themselves higher on performance than did their university or school-based supervisors (Jones and Randall 1977).

The results of this study were important in confirming the significance of the 16 generic teaching competencies in the revised program design. Data supported the decision to continue using these competencies in program development and operation.

A second study collected an array of demographic variables from 500 students enrolled in the program. The Research Task Force envisioned using these data in future research on isolating particular characteristics of effective teaching. It was decided also to support a

study to collect affective data from these students, who were enrolled in one of three certification programs--elementary, secondary, or all-level (music, art, health, and physical education). The affective study would determine if any of these program groups showed a unique profile of similar affective characteristics, as indicated by data from the Minnesota Teacher Attitude Inventory, the Adjective Self-Description, the Work Motivation Inventory, and Cognitive Style Mapping. No unique profiles were found for any of the three groups (Jones and Randall 1977).

The third study that spring was the first of four follow-up studies of Houston's CBTE program graduates. This study and a fourth study that was not part of the original plan are described later.

Program effectiveness and program validation studies require a valid, reliable instrument to measure teaching competence. Although standard criteria for evaluating student teachers was used throughout the program, the instrument itself had not been validated or tested for reliability. This job was given to a Performance Evaluation Committee, created not only to validate and establish the reliability of an instrument to measure teaching performance, but also to study the feasibility of its use at various student progress checkpoints during the program. The committee's efforts took the better part of two years, as the instrument was revised several times on the basis of extensive feedback from public school teachers, students, and student teaching supervisors. The final instrument, the Student Teacher Summative Performance Evaluation Instrument (PEI), contained six categories:

1. Planning and Preparing for Instruction
2. Performing Instructional Functions
3. Using Student Data
4. Relating Interpersonally

5. Professionalism

6. Related Experience

The next step was to devise a feasible procedure for assessing teaching performance at interim and exit checkpoints in the program. It was decided that a progress check would be most useful just prior to student teaching. A formal evaluation of teaching competence at this time could be used to diagnose potential teaching problems and would provide information useful to student teaching supervisors. A group of professors were asked to pilot test the PEI. Results from data on the time required for the evaluation, the level of confidence instructors had in their ratings, and the format of the instrument were not encouraging. The instrument was difficult to use and took too much time to complete.

The format of the instrument was revised and a second pilot test initiated early in the spring semester of 1979. This time, data about the evaluation instrument and procedures were encouraging, and instructors' reported high confidence in their ratings.

Concurrent studies of the PEI were made to find if the scores obtained could validly and reliably tell high from low competent student teachers and to investigate reliability among the raters. According to Piper and O'Sullivan (1981), "It was concluded from the results that the PEI can reliably and validly be used to identify high and low competent students."

Meanwhile, during the summer of 1979, the College of Education changed administrations and subsequently was reorganized. The new administration was not as committed to the CBTE program as outgoing Dean Robert B. Howsam had been. In the reorganization, the leadership of the undergraduate program was shifted, the Program Development and Implementation Council was abolished, and the committees and task forces that had been functioning to develop and evaluate the program were not reactivated. With these changes, the long-range research plans and continued development of the PEI were discontinued.

Original plans called for all methods course

instructors to use the PEI to evaluate their students in late spring 1979, and that these ratings would be compared with ratings of these same students' performances during the fall semester that year. Plans for the fall study were never executed.

During that spring, however, a study that estimated the concurrent validity of the PEI was conducted. The scores of 32 elementary education student teachers on the PEI were correlated with their scores on the National Teacher Examination (NTE). The results suggested that those students who tended to do well on the NTE, a measure of teaching knowledge, also tended to do well on the PEI, a measure of teaching performance (Piper and O'Sullivan 1981).

While efforts to develop the PEI were underway, four follow-up studies of program graduates were conducted. Attempts were made in the spring semesters of 1977, 1978, 1979, and 1980 to collect data from graduates. During the last two years, after reorganization of the teacher preparation program, individual faculty members continued the research.

The most serious problems in the teacher education evaluation efforts occurred with these four studies, which were intended to gather perceptual data from graduates to use with the PEI for program effectiveness and validation studies. The follow-up evaluation effort quickly became a search for workable methodology, because major difficulties arose with efforts to collect data from graduates who were no longer on campus. As long as respondents were enrolled in the program, gathering information was relatively simple because of easy access to them and because most students agreed to cooperate in the voluntary evaluation program. After graduation, however, finding these participants and obtaining their cooperation proved difficult.

The first of the four follow-up studies was launched in spring 1977. Students who were graduated from the College of Education in fall 1975 through spring 1976 were mailed questionnaires asking their perceptions of the importance of the program's 16 generic teaching competencies and their assessment of their performance of these teaching behaviors. Addresses were obtained from College files and from the

University Alumni Office. More than 500 questionnaires were mailed, but within two weeks, the U.S. Postal Service had returned 267 with notices of incorrect address. Only 17 responses were received and no useful data were obtained, thus precipitating a search for more effective procedures.

In the second study, all upcoming graduates were telephoned in the spring of 1978 and asked if they would participate in a follow-up study at the end of their first year of teaching. Most agreed and promised to advise the evaluators of any change of address. In spring 1978, a sample of 60 of the graduates were mailed a questionnaire and also asked if they would agree to telephone interviews. Thirteen questionnaires were returned. These graduates were interviewed and invited to attend a group meeting on campus. Seven persons participated. Again, numbers were too small to yield useful data.

In spring 1979, yet another strategy was tried. Investigators met with all student teachers to explain the follow-up study and seek volunteers. Thirty students agreed to participate in the study that was proposed to identify problems faced by graduates during their first year of teaching, to determine the ways they coped with these problems, and to evaluate their teaching performance in the next several years. Data were collected during four dinner meetings at the end of student teaching (May 1), at the end of orientation workshops conducted by employing school districts (August 23), and at the ends of participants' third (September 13) and ninth (November 15) weeks as classroom teachers. During these meetings, participants completed an open-ended questionnaire and the Teacher Concerns Questionnaire, and in group sessions they described their concerns, problems, and methods for coping. These discussions were audiotaped for later analysis. In addition, participants audiotaped their own perceptions at the ends of the first and sixth weeks with students and mailed these to investigators. Plans called for observation and on-site interviews with these graduates and their professional colleagues and students during spring 1980 and in subsequent years, but these procedures were abandoned because of the College

reorganization.

Results from the four data collections indicated that these beginning teachers encountered a series of unexpected problems, some of which had not been considered by the designers of their teacher preparation program (Felder et al. 1980). These findings caused our faculty members to undertake another follow-up study to clarify the problems encountered by new teachers and to suggest ways to redesign teacher preparation programs and ways to ease the entry of beginners into the profession.

To obtain a study group, the faculty conducted a workshop for beginning teachers during the summer of 1980. Administrators in Houston school districts were asked to publicize the workshop and 22 new teachers, graduates of 13 different institutions, attended. All agreed to cooperate in the proposed study to identify the problems they encountered during their initial year in the profession.

Data were collected on a delphi-based rating system and clarified in a series of three-hour sharing sessions. In describing the study, Houston and Felder reported:

> One of the problems of pre-specified rating scales is the lack of consumer orientation. Problems and concerns stated on the instrument may or may not be the real ones for a particular population. To treat this weakness, we asked all beginning teachers to identify on 3" x 5" cards their concerns and problems. These were sorted out and synthesized into 54 questions which represent the combined thinking of the group. In a second step, teachers responded on a seven-point scale to each of the 54 questions. This procedure permitted items to be specific and precise with respect to the particular group while permitting analysis of the depth of concern for each item by each participant. (in press)

Insights From Two Successful Follow-up Studies

Although the follow-up studies were plagued by methodological difficulties that limited the usefulness of their data, they nevertheless provided some interesting insights into the world of the beginning teacher. Before the beginning of school, the new teachers were concerned primarily about the expectations of their principals and fellow teachers, about disciplining students, and about planning and preparing for instruction:

> A certain detachment pervaded their concerns and their perceptions of themselves in school. Their converations reflected a third person perspective. Their problems were hypothetical; their work orientation less systematic or focused than when tackling other more familiar problems.
>
> Despite their concerns, these beginners believed in themselves, were buoyed by the positive feedback they received when offered their first job, and looked forward to working with children and youth. They thought they knew what teaching was all about. Their attitudes could be characterized as euphoric. (Houston and Felder in press)

The realities they encountered as beginning teachers were unexpected and often devastating. The novices' initial orientations to their new schools tended to be a series of meetings and a blaze of instructions, with little time left for setting up classrooms or preparing for the arrival of students. During the first weeks of school, the required administrative paperwork overwhelmed many of them, and by the third week, their priorities had shifted to time management and dealing with fatigue. Many expressed a sense of being out of control, of just making it from one day to the next.

By the end of the ninth week, the level of importance these beginning teachers placed on every concern they had identified had been reduced more than

one point on a seven-point scale. Concerns that remained high centered on issues related to student achievement, classroom management, dealing with parents, and time management. The level of stress had eased for most and some reported that they felt in control and enjoyed teaching. However, a few voiced serious thoughts about leaving teaching at the end of the semester or the school year.

How did these beginning teachers cope with their problems? Most of them expected to cope by being prepared for class, talking with their principal or other teachers, and searching for new ideas. The ways they actually coped during the initial days of school were less systematic. They searched for anyone who would listen to their concerns and frustrations and appeared to long for a "sounding board." They quickly realized that the principal and other teachers were often too busy with their own tasks to help much, and they experienced feelings of isolation and helplessness. They worked long hours just to keep up, and reported thay were spending more and more time in their rooms after school doing paperwork and planning.

Our experience in these studies of beginning teachers, although limited in many ways, causes us to ponder several points:

1. Obtaining and retaining subjects for follow-up studies was much more difficult than any of us had expected. None of the four different strategies we tried proved to be effective. We suggest that others planning follow-up studies need to give ample consideration to possible problems or they may experience unexpected costs, delays, and disappointments.
2. Regardless of the institution from which they graduated, the beginning teachers we studied were not prepared for some of the tasks being performed by experienced teachers, who have developed routine ways of handling many tasks. When the behaviors of effective teachers are analyzed and used as a basis for identifying competencies to be developed in teacher preparation programs, it is apparently easy to overlook the need to train explicitly for some

subtle, but important, routines.

3. Beginning teachers were expected to perform with the same degree of expertise as teachers with years of experience. Beginners were provided with little to ease or assist their entry into the world of work. School orientation sessions were a combination of welcomes and information dissemination, neither of which contributed to helping the beginning teacher get ready for that first day with students. There often was no one assigned to provide professional help to these beginners, who learned how to survive through trial and error as trouble spots emerged. We believe that such an experience must strongly influence a teacher's future attitudes and performance, and we wonder if it is possible that teacher burnout, teacher dropout, and teacher indifference may begin during this time.

Reflections and Suggestions

Our work has continued for more than a decade and we realize as we reflect on our experience that our viewpoint may be biased. Yet, we believe the following eight perceptions are important enough to share.

As a profession, teaching must discover and transmit those behaviors that are positively related to desired learner outcomes. Teaching must provide a service that society acknowledges as worthy of support. That means the individuals who perform this service must do so competently enough to warrant public trust and confidence that teaching can make a difference. If those who prepare teachers accept the premise that teachers can and should positively influence pupil achievement, then it becomes the job of teacher education to identify those competencies that characterize "effective teaching" and assist prospective teachers and inservice teachers to acquire them.

The most effective and efficient programs for preparing teachers are designed as regenerative instructional systems; the successful operation of such

systems require that decisions must be data based. When competencies associated with effective teaching are known or can be confidently assumed, teacher education programs can be designed and delivered as integrated, unified, self-renewing instructional systems that are explicitly purposive. Such programs tend to be output referenced and data dependent and, because of their connectedness and regenerative qualities, can be expected to achieve their purposes more effectively and efficiently. However, developing an instructional system requires the collaboration and cooperation of many diverse faculty members, often from several different departments. These faculty, generally trained in specialized fields such as educational psychology, math education, and health or physical education, often must learn how to think like "teacher educators," that is, to refocus their attention from their narrower specializations to a larger, more holistic conception of the teacher preparation program. Without this gestalt, program components designed by individual faculty will be disconnected and will not form an integrated whole. Change in any part of the system will affect other parts; hence, decisions to alter the program must be made collectively by the faculty rather than individually. It is critical to the success of the program that such decisions be made on the basis of the best possible information to assure that the wisest course of action is pursued. Insofar as possible, such data should be obtained through program evaluation efforts and teacher effectiveness research, as both have a contribution to make to the business of program design, development, and operation.

A clearer distinction needs to be made between research and program evaluation, and the value for each for contributing to the professional knowledge base in teaching should be acknowledged. Program evaluation and research are often confused. Teacher education has a two-fold function, to discover and to transmit effective teaching behaviors. It might be stated simplistically that through research we discover what those behaviors are and through program evaluation we develop hunches about what they might be and learn how to effectively

train for them. In research, one has the luxury of not having to make a decision. It can always be argued that data are insufficiently valid and reliable to permit useful conclusions. In program evaluation, the operation of an ongoing program demands that decisions be made. Program decisions will not wait for "perfect" data; they must be made regardless of the quality of the available data. The question in program evaluation, therefore, is: What are the best data one can get at a price one can afford? The resulting "mushiness" of data so often criticized by those who confuse the purposes of program evaluation and research should not obscure the very necessary and useful professional contribution that results from evaluation studies. It is only through more open investigation that we can improve our ability to train teachers and can generate hypotheses that more rigorous research methods might test.

Faculty who have been involved in the design, development, and operation of innovative programs to train teachers may be more effective as program evaluators than those who have not had such experience. Although it is acknowledged that objectivity will likely be greater when evaluation is conducted by persons other than those who design and operate a specific program, it is nevertheless argued that persons who conduct program evaluation studies should have had general experience in such program development and operation. One must often settle for much less in program evaluation than one would like. Institutions that have conducted follow-up studies of their graduates have experienced the disappointment and discouragement of the dwindling sample. Few institutions are using instruments to evaluate teaching performance with which they are satisfied. When program evaluators have not experienced the complexities and difficulties associated with program development and operation, they may find it difficult to depart from conventional research orientations. When such orientations are imposed on program evaluation efforts, much useful information is lost and many rich opportunities are overlooked. A program evaluation orientation would expect to encounter methodological difficulties unacceptable for research

and would suggest that regardless of this fact, insights can be gained and information useful to program improvement and hypotheses seeking can be obtained.

The faculty reward systems that operate in most institutions discourage and often penalize the behaviors needed to develop and evaluate more effective teacher education programs. The reward system in most institutions is incongruent with what is needed to improve teacher education. Rewards are generally won for scholarly activity and teaching, usually defined in ways that place little value on products such as training designs or materials and in-house reports of evaluation studies. For faculty to make changes necessary to adopt a new program, they must perceive that the effort will have importance and significance to them personally. They understandably expect payoffs for themselves--recognition within the system, increased salaries, and progress toward their long-range career goals--and they want these rewards along the way. Most cannot afford to wait the decade it takes to design, put into operation, and evaluate a new approach to teacher preparation. In many cases, rewards diminish for faculty who get involved and stay involved. The time these people spend on program design, or developing instructional materials, or evaluation merely makes it more difficult for them to compete successfully with colleagues who choose not to become involved. Sooner or later, most faculty begin to conform their behaviors to what the system values. Administrators in colleges and universities have a special responsibility to provide the leadership to assure that teacher education is valued and that faculty efforts related to improving programs for preparing teachers are rewarded.

Acknowledgment of program evaluation data puts faculty members at public risk. Difficult as evaluation of teacher education may be, it sometimes appears easier to obtain data than to get anything done about it once available. Several institutions have described faculty "indifference to program evaluation data" (Hord and Hall 1980). There is little indication that faculty welcome data about how their courses or program components are

operating, and they often do little or nothing to modify or alter their practices on the basis of such information. Data appear to put faculty at "public risk." If they acknowledge the data, they publicly must admit the possibility of their responsibility; if they accept their responsibility, they are expected to do something about problems that exist. The risks are great--more work for little payoff, and fear that data could be traced to them, thus comparing their more public performance against that of others who are more able to hide any flaws.

Developing and evaluating more effective programs for preparing teachers is not always a scholarly activity; it is sometimes a political activity. The teaching profession has a shallow research base. There is not widespread agreement regarding practices for educating teachers nor even general acceptance of what effective teachers do; empirical research has not validated the correlation between many teacher behaviors and pupil achievement. For these reasons, it is difficult for programs to maintain momentum over time. New ideas, which appear to offer great promise, pop up regularly and it is difficult not to be tempted into new directions. The political limelight shifts nationally and regionally from one approach to another; from CBTE to Teacher Centers, from handicapped to gifted, from humanistic programs to computer technology. As the spotlight changes, a program can be illuminated or shadowed. Changes in direction can cause a loss of momentum in program development, which can seriously damage the effectiveness of a training program and discourage those involved.

To move the profession forward, those of us in teaching must respect and build upon the work of each other. Centuries ago, the Greek philosopher and geometrician Thales predicted a solar eclipse. People of his time thought he had performed a miracle, but Thales was no miracle worker. He based his prediction on observations that other people had recorded over a 500-year period. The individuals before Thales who thoughtfully described the eclipses they saw probably

were not always sure why they did so, and perhaps others of their time viewed their work as having little meaning. However, when summed and analyzed, their work resulted in a major advance in humankind's quest to understand the natural world.

The processes involved in the complex human interaction we call education can be observed and described. It is important, we believe, to open up our quest for knowledge. We must come to understand and respect all genuine efforts to study teaching. We must not be trapped into the posture that standardized and validated instruments are the only research tools that are useful. Sensitive, perceptive, thoughtful reflections on the processes and outcomes of teaching may lead to the insights and hypotheses that will permit major breakthroughs, such as Thales' prediction.

We must continually strive to build our knowledge base systematically, piece by piece. In time, if enough investigators diligently pursue promising courses of study, more valid answers will emerge. Our profession will have its Thales who will give expression to the work of many unknown observers when the right moment has arrived.

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APPENDIX A

CHARACTERISTICS OF HOUSTON'S CBTE PROGRAM

The following 12 characteristics were adopted by the College of Education faculty to give direction to the competency-based teacher education program. These are quoted from a memorandum to the College faculty (Hollis 1976).

1. Compentency based; that is, the competencies to be demonstrated by the student are made explicit, the criteria to be applied in assessing the student's competencies are made explicit, and the student is held accountable for meeting those criteria. The emphasis is on the demonstration, not the acquisition, of those competencies specified as program expectations.

2. Campus-centered and field oriented; that is, students are provided with opportunities to experience instruction and to demonstrate competence both on campus and in field sites depending upon the nature of the particular instructional or assessment activity and a determination as to where that activity can most effectively and efficiently take place.

3. Role-model based; that is, a conceptual model of the teacher's role is used as a basis for identifying and specifying those competencies students are expected to demonstrate.

4. Criterion-referenced; that is, assessment procedures are designed to determine whether or not a student has demonstrated competency at or above the level of mastery specified; the competency of each student is judged on the basis of predetermined criteria and is not determined through a comparison involving other students.

5. Pluralistic; that is, there is conscious acceptance of the notion that no one philosophy of instruction has been proved best; consequently, a variety of divergent views are posited as untested assumptions which the system must test.

6. Humanized; that is, program design and operation recognize the dignity and worth of each individual so that each perceives that he or she is being treated as one of worth.

7. Personalized; that is, a student is provided with instruction which takes into account his or her uniqueness.

8. Modularized; that is, the delivery of instruction is accomplished through the utilization of instructional modules; instructional modules are sets of learning activities--rationale, objectives, prerequisites, pre-assessment procedures, and remedial procedures--which are intended to facilitate the learner's acquisition and demonstration of a particular competency or set of competencies.

9. Multi-instructional; that is, the design and operation of the teacher education program is a responsibility shared by colleges, public schools, and the organized teaching profession.

10. Systematized; that is, the systems approach is used in program design and operation.

11. Regenerative; that is, the program is an open system capable of continuous revision on the basis of constructive data supplied by sound formative and summative evaluation procedures.

12. A system with alternatives within it; that is, the program is a single single instructional system which constitutes an integrated, comprehensive whole; however, the system does accommodate a divergence of viewpoints within its confines.

APPENDIX B

GENERIC TEACHING COMPETENCIES
ADOPTED FOR HOUSTON'S PROGRAM

The following 16 competencies were approved by the College of Education faculty for use in identifying instructional objectives, designing instructional materials, and evaluating performance. These are quoted from a memorandum to the college faculty.

1. Identifies learner's emotional, social, physical, and intellectual needs. Draws upon knowledge of human growth and development, learning theories, social/cultural foundations, assessment techniques, curriculum goals and content in order to gather information about the learner and to identify the instructional needs.

2. Identifies and/or specifies instructional goals and objectives which are based on learner's needs. Views the setting of instructional goals and objectives as a key element in instruction; reconciles curricular and educational goals with present level of learner's needs; analyzes instructional goals to identify knowledge, skills, and attitudes needed to achieve those goals; states objectives so that intent is clearly communicated to learner.

3. Designs instruction appropriate to goals and objectives. Develops a variety of strategies for prompting achievement of instructional goals and objectives which reflect the learner's needs and offer the learner alternative ways of achieving those goals and objectives.

4. Implements instruction that is consistent with plan. Demonstrates the ability to use a variety of strategies which have the potential to promote learner achievement of specified instructional goals and objectives.

5. Designs and implements evaluation procedures which focus on learner achievement and instructional effectiveness. Evaluates learner performance with reference to a variety of goals and objectives; reports learner achievement through grades, consultations, checklists and/or other appropriate means; evaluates instructional effectiveness by comparing learner's achievement with objectives.

6. Integrates into instruction the cultural environment of students. Incorporates materials, examples, illustrations, motivators, and reinforcers from learner's cultural environment so that learner is able to identify with content, processes, and intended outcomes of instruction.

7. Demonstrates a repertoire of instructional models and teaching skills appropriate to specified objectives and to particular learners. Describes and demonstrates a variety of instructional models; uses appropriate models of instruction based upon the subject, objectives and needs of learners; uses teaching techniques appropriate to those instructional models.

8. Promotes effective patterns of communication. Recognizes the value of effective communication; communicates effectively verbally, nonverbally, and in writing; accepts and supports ideas of others; strives for more productive communication; and encourages interaction among all members of the group.

9. Uses resources appropriate to instructional objectives. Operates audiovisual equipment, makes instructional materials, identifies sources of instructional materials and uses instructional materials appropriate to objectives; organizes resources in the classroom and community for instructional purposes.

10. Modifies instruction on the basis of learner's verbal and nonverbal feedback during instruction. Demonstrates a continuous awareness of learner's activity to make decisions regarding success of instructional processes and learner achievement; alters instructional processes on the basis of information thus obtained.

11. Uses organizational and management skills to establish a maximally effective learning environment. Establishes and maintains a classroom climate which promotes individual achievement and personal growth; organizes and encourages productive group interaction; and establishes positive relationships with and among learners.

12. Identifies and reacts with sensitivity to the needs and feelings of self and others. Demonstrates a concern for the needs of learners; recognizes that as a member of a learning group, the teacher has needs which must be met in a teaching-learning situation; and reacts to meet the needs of learners, self, co-workers, and parents.

13. Exhibits openness and flexibility. Searches continually for ways to improve instructional effectiveness; listens critically to ideas of others, is open to suggestions, and bases decisions upon best available data.

14. Works effectively as a member of a professional team. Works with others in order to achieve commonly shared goals; displays behaviors consistent with the goals and ethics of the teaching profession.

15. Analyzes professional effectiveness and continually strives to increase that effectiveness. Uses a variety of observational and analytic procedures to study teaching effectiveness; examines the consequences of teaching by focusing on learner objectives and instructional outcomes.

16. Designs and implements instruction which incorporates career education concepts. Develops and utilizes a variety of strategies for embedding career education concepts into course content and instructional activities; addresses the need for learners to learn about themselves, their environment, and the work roles played by individuals in society.

Subsequently, three additional competencies were adopted by the Houston education faculty. These are:

17. Organizes learning environments which meet the varying needs of learners. Assesses the impact of various learning environments upon the learners' emotional and intellectual development; identifies a variety of learning environment models; demonstrates the ability to use various learning environments for instructional purposes; systematically alters the learning environment as the needs of the learner change.

18. Presents subject matter accurately. Demonstrates adequate knowledge of the subject matter content presented and selects appropriate subject matter for presentation.

19. Identifies and teaches reading skills necessary for student understanding of given content areas. Assesses and alters the difficulty level of instructional materials; diagnoses the reading abilities of students; incorporates strategies for improving vocabulary, comprehension, and study skills appropriate to given content areas.