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ABSTRACT

The first section of this report describes the rationale and objectives of the Research Utilization in Elementary Teacher Education (RUETE) study which developed techniques for exposing student teachers to current research on effective instruction and effective schools. The progressive phases of the RUETE study are outlined and discussed. The second section is devoted to a description of the involvement of the Mills College Education Department with the RUETE study, and the use of study findings in implementing a field experience program involving their student teachers and cooperating teachers in applying research findings in their actual classroom settings. Focus was upon the positive relationship between academic learning time and student achievement. Active teacher behaviors, identified by research studies as being effective, were emphasized. The project was designed to demonstrate to student teachers and cooperating teachers how to assess academic learning time, academic achievement, and active teaching behaviors in their classrooms, in effect, enabling them to use a researcher's approach to their work. A discussion of the effectiveness of the RUETE project includes quotations from participants on their experiences. (JD)

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MILLS COLLEGE OAKLAND, CALIFORNIA 94613

DEPARTMENT OF EDUCATION

APPLYING RESEARCH ON EFFECTIVE TEACHING TO PRESERVICE/INSERVICE ELEMENTARY TEACHER PREPARATION: A REPORT ON WHERE THE SNOW GOES WHEN IT MELTS

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Paper presented at the second annual meeting of the Northern Rocky Mountain Educational Research Association, Jackson Hole, Wyoming, October 1984.

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INTRODUCTION

Throughout the past fifteen years the Gallup Polls have recorded a general lack of confidence in schools and teacher performance. Critics of teacher preparation have become more and more insistant in their demands for reform (Joyce & Clift, 1984). Goodlad (1983) has built a pervasive argument for rethinking schools and the role of the teacher. The suggestions for rethinking the role of the teacher necessitates the revision of teacher preparation programs.

In 1983 the National Institute of Education (NIE) funded the Far West Laboratory for Educational Research and Development (FWLERD) to conduct a study, Research Utilization in Elementary Teacher Education (RUETE). The purpose of the study has been to develop techniques for better exposing student teacher to current research on effective instruction and effective schools. This purpose has also been espoused by Joyce and Clift (1984) as a goal for developing linkages between the emerging knowledge base related to teaching, the connection of teachers' workplaces to centers of inquiry and the preparation of teachers.

This presentation is designed to provide an explanation as well as a description of the research/intervention process of the Mills College preparation program as it is conducted in cooperation with the Vallejo City Unified School District.

Design of the RUETE Research Activity

The Mills College teacher preparation program was one of three sites selected for participation in the RUETE study. The RUETE project drew upon existing findings from the research on effective instruction to inform teacher education practice. The design and implementation of this two-year study integrated (a) the application of research on effective instruction, (b) the utilization of processes of adult learning in a systematic manner, and (c) the development of teacher academies.

FWLERD, in conjunction with the staffs of the preservice elementary teacher education programs at the three participating institutions of higher education, worked toward applying some 10 years of research on teaching in elementary schools to build preservice teacher trainees' knowledge and skills in the areas of effective classroom instruction. The application of research occurred through a process of collaborative inquiry, using the Interactive Research and Development on Teaching (IR&DT) model developed at FWLERD. The IR&DT central theme of collaborative inquiry provides knowledge and experience for solving problems in concrete and directly relevant professional situations. The research intervention plan included two years (and phases) of field activities.

The two major phases (Phase I from December 1982 to November 1983, and Phase II, from December 1983 to November

1984). The first phase of the RUETE project was designed to establish the Regional Teacher Education Team (RTET) consisting of one faculty member from each of the three participating teacher training institutions and to develop ways of incorporating recent research fingings from the school effectiveness studies into the teacher education process. The second phase was designed to complete the research/intervention process and more fully develop the teacher education academies.

Phase I of RUETE

In its first phase, the study selected and convened a RTET, consisting of experienced teacher educators from these institutions:

- o University of Utah, Salt Lake City (Amy Driscoll, Regional Research Fellow), in collaboration with the Salt Lake City School District;
- o University of Nevada, Reno (Kenneth Johns, Regional Research Fellow), in collaboration with the Washoe County School District; and
- o Mills College, Oakland, California (Richard Ponzio, Regional Research Fellow), in collaboration with the Vallejo City Unified School District.

The team collaboratively examined the consistent patterns of research findings about effective instruction and successful elementary schools, and employed those findings in analyses of classroom situations. The collaborative process provided the elements and experiences of the IR&DT model. The examination of research findings included reviewing, discussing, elaborating, and interpreting major aspects of instructional effectiveness research at the elementary school level.

In order to analyze classroom instruction RTET members practiced several observation strategies/instruments related to the application of the instructional effectiveness research findings to the instruction of preservice teachers. This included a variety of observation instruments related to teaching behaviors as well as student success.

The RTET members then developed plans for using the research findings at their individual sites. Each of the three plans for using the research findings incorporated many of the elements into the final research/intervention design.

Phase II of RUETE

The second phase built upon, extended and consolidated the plans of the RTET members and their individual research/intervention plans that had been initiated in phase I. The FWLERD project director, along with the Hills College Regional Research Fellow (RRF) monitored and supported the planning and implementation of the research intervention plans. The major conceptualization utilized an interactive research development, dissemination and implementation procedure. This included both teacher educators (the RRF) along with local school district personnel responsible for hiring and inducting new teachers to assure tailoring the intervention to meet perceived school district needs.

Summary of RUETE Goals

The Research Utilization in Elementary Teacher Education project focused upon the development of techniques for integrating research on effective instruction and effective schools into preservice elementary teacher preparation programs. The first phase was designed to establish a Regional Teacher Education Team who would incorporate recent research findings from elementary school effectiveness studies into their respective preservice elementary school teacher preparation programs (Gee, 1983).

The focus of this case study is primarily with the goals mentioned above. The remainder of the study will address specifically the collaborative efforts between the FVLERD, Mills College, and the Vallejo City Unified School District toward identifying and incorporating certain of the findings of effective instruction research into the preservice training of elementary teachers.

FORMATION OF THE MILLS COLLEGE COLLABORATIVE TEAM

A feature of the Mills/Vallejo/FVLERD intervention design worthy of note is that all participants (individuals and institutions alike) were volunteers. All were committed to the idea that it was worth the time, effort and headaches to work together to improve teacher preparation. All of the original participants (with the exception of one cooperating teacher)

were full participants until the completion of the research/intervention project. The one cooperating teacher who left the project after the completion of Phase I had taken on additional responsibilities at his school and felt he couldn't commit the time needed for the project.

As persons became involved in the collaborative intervention effort, they became full-fledged collaborators, involved in any and all decisions/choices appropriate to their function/role in the project. This last feature, while not designed into the intervention, seemed to be an important feature as the project evolved.

Another point that seems interesting in retrospect, was that a faculty member of the Education Department at Mills along with the RRF and a colleague at Mills on sabatical leave from Queens University, collaborated on utilizing similar procedures to assess the impact of effective instruction research on secondary student teachers in science. This further collaboration by like-minded colleagues outside the project on project-related topics seemed to indicate that not only the processes involved in the project, but also the content was of interest to teacher educators at the Mills College site. Figure 1 provides an illustration of the two-year development of the research/intervention design.

Figure 1.

Schematic Diagram for RUETE Research/ Intervention at the Mills College Site Phases I & II

PHASE I

Establish Regional Teacher Education Team

Regional Team Uses Collaborative Processes to:

- Examine findings of research on instructional effectiveness
- Use research findings as part of analysis and description for planning collaborative intervention

Mills College Regional Research Fellow (RRF) and other Teacher Education Faculty identify a school district (Vallejo) to invite to participate

Collaborative Team for the Mills College Site:

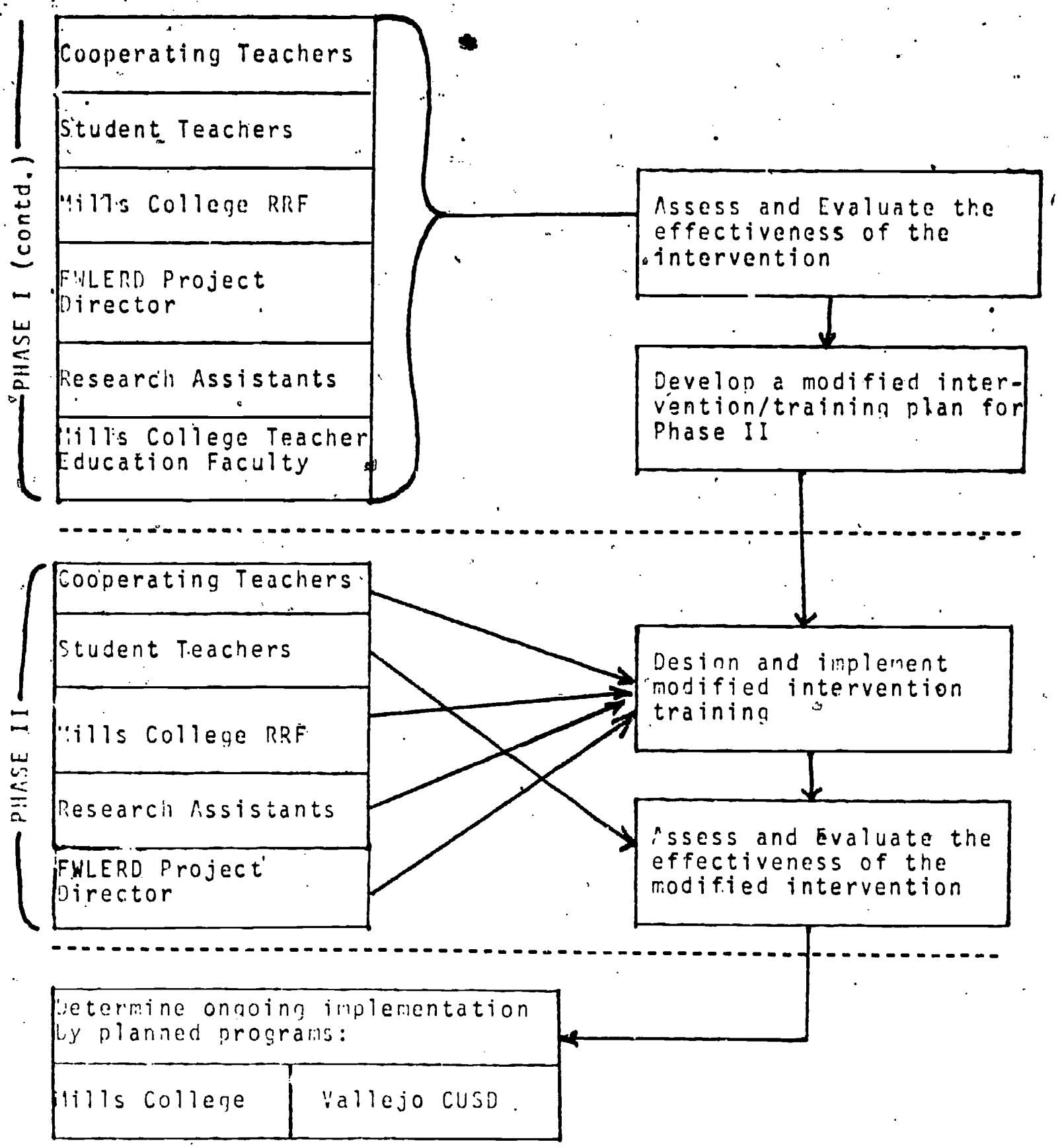
- Far West Laboratory
- Mills College
- Vallejo Unified School District

Identifies:
- Research Assistants (2)
- School Site (1)

Identify Effective Instruction topics of mutual interest (ALT & ATS)

Design and Implement intervention

Figure 1. (contd.)



Summary of the Mills College Site Situational Analysis

The major purpose for conducting a situational analysis prior developing a research/intervention plan was to present a broad view of the existing content and processes utilized in the Mills credential program. The analysis would help guide the development of the intervention. . .

Briefly, one of the more unusual characteristics of the teacher preparation program at Mills is the opportunity for student teachers to attend class block sessions that combine both elementary and secondary credential candidates for course work. A second feature of the program is its size. It is relatively small in terms of full-time faculty (3) and preservice students involved (12-18). It was felt that techniques for applying the effective instruction research would have a stronger impact on this small population than they would have on a much larger student and faculty group.

A review of the data that were collected for the Situational Analysis presented several interesting insights. First and foremost was the information that student teachers seemed to be relatively unaware of current research on effective instruction. Their information came from casual conversations with their cooperating teachers, who themselves receive information fairly far removed from the primary sources of research. Implications for the research design from these initial findings suggested that a strategy of building from awareness, knowledge, application, and evaluation would serve to develop the student teachers' ability to apply research findings to their classrooms. It was

assumed this would be enhanced if the student teachers were trained in specific observation techniques that would allow them to become more familiar with data gathering techniques used to measure change.

A second interesting insight provided by the situational analysis was the strength of the influence exerted by the cooperating teachers on student teachers. The cooperating teacher seems to serve as the "gatekeeper" in terms of what processes and content were emphasized or excluded in the classroom. It was interesting to speculate the impact of requiring the application of certain teaching behaviors in the classroom mileu as part of the intervention.

A third area of interest was the potential interaction of student teachers and cooperating teachers who have been taught to apply the same observation instruments. This potential for "coaching" interactions between the student teacher and cooperating teacher could reinforce the levels of skill and knowledge of both the cooperating and student teachers.

A fourth insight had to do with encouraging the teacher education faculty to include more research on effective instruction in their course work. This was to take the form of more assignments related to applying the research to classroom practice while student teaching. The suggestion of the need for elementary teachers to be aware of, and be able to implement, active teaching behaviors is documented by Fisher, et al. (1980), Good (1983), and Stallings (1983).

Upon review of course syllabi, along with topics included in student teacher evaluations, it became apparent during the data collection for the Situational Analysis that active teaching behaviors (identified by Good, 1983) related to teacher/student interactions were of concern to student teachers. Upon reviewing recent literature related to applications of research for teacher training, the active teaching behaviors along with Academic Learning Time (ALT) were identified as a focus for this study.

In summary, the situational analysis provided a background for examining the Mills College elementary teacher preparation program. The Mills program appeared ready to participate in applying research on active teaching behaviors and academic learning time to the preservice preparation of elementary teachers. In addition, the cooperatin teachers were interested in the applications of research to th teaching. These two factors, in concert with the existance of the VCUSD's Professional Development Center, was encouraging for the examination of applications of research on effective teaching for teacher education programs.

Rationale, Goals and Objectives of the Intervention

The need for elementary teachers to understand and use instructional practices derived from recent teacher effectiveness research has been documented by Good (1983), Joyce and Clift (1984) and Stallings (1983). Stallings specifically states that "In order to continue to learn about effective instruction, the preservice teacher needs the opportunity to develop research skills. The teacher preparation courses should provide opportunities for students to develop questions which can be examined through naturalistic recordings, structured observations, criterion tests, surveys, or interviews." The purpose of the Mills RUETE project has been to study the application of research related to effective instruction to the preparation of elementary school teachers.

One area of recent research relating to effective instruction as reported by Fisher et al, (1978; 1980; and 1981) indicates a positive relationship between Academic Learning Time (ALT) and student achievement. These studies define ALT as a ratio of the time allocated for academic learning by the teacher, the time during which the student is actually engaged in learning, and the amount of time the student experiences a high success rate in the relevant learning task. All three of the above criteria are elements of academic learning time. Fisher's work suggests that the measurement of

ALT is one of the most visable indicators of learning while it is taking place. These findings also link ALT to specific teacher behaviors such as selection of activities, presentation of learning tasks, and feedback to students (Fisher, et al; 1981).

In addition, Good (1983) has identified specific teaching behaviors that foster student learning in elementary school mathematics. We labeled these behaviors Active Teaching Behaviors (ATB). Two basic features of active teaching behaviors are teacher direction of learning and a high level of teacher-student interaction. Other attributes of more effective teachers included the clear presentation of information, allowing students to initiate more academic questions, and creating a somewhat relaxed learning environment with comparatively little praise or criticism. His findings also indicated that more effective teachers expressed higher achievement expectations for their students.

A goal of this project was to apply the findings of Good and Fisher to the improvement of preservice teacher education. The project was designed to work with student teachers and cooperating teachers to measure academic learning time and active teaching behaviors in their classrooms. It was expected that a heightened knowledge of elements identified by research as having a positive impact on teaching and learning

would increase ALT and or ATB. The ability to observe for and measure ALT and ATB became, in effect, the "research skills" for the student teachers and cooperating teachers participating in this project. The strategies devised by the student teachers and cooperating teachers to increase the ratio of ALT and the inclusion of active teaching behaviors became the "research questions" mentioned earlier vis-a-vis Stallings (1983). It seemed reasonable that as the student teachers and their cooperating teachers were able to make distinctions between behaviors that have positive influences on student success and those that do not, they would include more of the former in their repertoires. This project proposed a model that promotes, and in fact depends upon, the mutual open sharing by both the student teacher and cooperating teacher of feedback related to their instructional effectiveness.

The teaching of math in the elementary classrooms was designated as the area in which the levels of ALT and the active teaching behaviors would be assessed. Math was chosen for three specific reasons. First math is considered a "basic skill" and is mandated to be taught to all pupils by all teachers at the elementary level. Secondly, the levels of student success can be easily determined, as most responses are clearly either correct or incorrect . Third, the research cited earlier (by both Fisher and Good) was based on math as a content area.

The project combined student teachers and their cooperating teachers as colleagues in training sessions related to the measurement of ALT and ATB. Details of the training appear in the methodology section of this paper. This design was intended to promote feedback between the student teacher and the cooperating teacher as they attempted to apply the new-found distinctions to their assessments and planning of classroom instruction. The combined training also provided a common lexicon for their discussions relating to classroom practice, and promoted reinforcement for effective instruction practices and mutual support. This project was the first time Mills College had undertaken the simultaneous involvement of preservice and inservice teachers on research-based topics.

It proved, in fact, that developing student teacher and cooperating teacher skill and knowledge of classroom instruction research strategies as "teams" has assisted in the development and use of instructional behaviors, so the model is being incorporated into the Mills College teacher preparation programs toenhance the quality of teachers prepared by Mills. The findings of this project have become the initial topics of the Teacher Education Academy convened by Mills during the 1983-84 academic year. The project findings can also contribute to the literature on teacher preparation vis-a-vis the question "does knowledge and feedback help change teacher

behavior"? In addition, the model of simultaneously training preservice and inservice teachers in a research-based set of techniques in such a way that they provide feedback to each other as colleagues should generate findings related to the student teacher - cooperating teacher relationship, including the "supervision" of the student teacher by the cooperating teacher.

Hypotheses for Phase I (Fall Semester, 1983)

1. Student teachers and cooperating teachers who are trained to assess ALT and ATB will increase their instructional effectiveness in math.

2. Student teachers and cooperating teachers who are trained to assess ALT and ATB will increase the ratio of ALT in their math lessons as measured two months after the training session.

3. Increased knowledge of research related to ALT and ATB will change the supervision of student teachers by their cooperating teachers through: specificity of feedback; increased reciprocity of feedback between the cooperating teacher and student teacher; and, common lexicon related to the feedback will be adopted

Hypotheses for Phase II (Spring Semester, 1984)

1. Student teachers who have been trained by their cooperating teachers to assess ALT and ATB will apply the knowledge to

improve their instructional effectiveness in teaching math. (This was projected since: a) these new cohorts have already had a semester of student teaching, and b) since the cooperating teachers helped design the training the cooperating have a high level of committment to the student teachers' performance.)

2. Cooperating teachers who trained the student teachers will exhibit increases in ATB measures over their measures at the end of Phase I. (This again related to their involvement in the training procedures and increased "practice" time.)

3. The impact of the training of student teachers by cooperating teachers and the subsequent student teaching placement with those cooperating teachers will develop the student teachers' abilities and interests for what Russell (1983) labels "reflection-in-action". (It was proposed this interest in reflection would be brought about by the cooperating teacher "modeling" this behavior in using feedback for improving instruction.)

METHODOLOGY

This section will focus upon the selection of the cooperating teachers, student teachers, and research assistants; a set of definitions; a time-line of design procedures; a description of the training intervention procedures; and, a

description of observation, instrumentation and data collection procedures.

Sample Selection

The student teachers in the sample consisted of five preservice elementary credential candidates in Phase I, and four credential candidates in Phase II. There were five cooperating teachers in Phase I, and four of those five continued into Phase II as cooperating teachers. The The intervention took place at the elementary school site where the cooperating teachers taught. The school site was a kindergarten through sixth grade school in the VCUSD, and operated on a year-round (45-15) schedule. In selecting the Research Assistants (RAs) to be involved in the project, the RRF and Staff Development Coordinator of the VCUSD met and discussed the qualifications of several teachers and administrators employed by the VCUSD who might work well as project RAs. It was determined that the site vice-principal and a district teacher who was about to begin a Ph.D. program would be well suited for the RA positions. The VCUSD teachers selected as cooperating teachers were part of the "preferred" pool of teachers consistently utilized by the teacher preparation program at Mills. Each of the five volunteered to be part of the intervention program. Each of the five were also recommended

by the building principal and vice principal. The Mills teacher education faculty were in agreement with the teachers selected also (one of the five had graduated from the Mills College program). The nine student teachers participating in the RUETE project were credential candidates in the Mills elementary credential program. Five were placed with the five cooperating teachers in the usual manner. In an unusual happenchance three of the original five student teachers in Phase I dropped out of the program for financial reasons at the end of Phase I. This left only two student teachers who completed all of Phase I and II. During Phase II four of the five original cooperating teachers continued as cooperating teachers, and they were matched with four new student teachers. In summary, there were five student teacher - cooperating teacher pairs in Phase I, and four student teacher - cooperating teacher pairs in Phase II. All of the student teachers and cooperating teachers volunteered for participation in the RUETE project.

The five cooperating teachers in the sample had from 2 years to 14 years of experience, two were males and five were females. The nine student teachers ranged in age from 22 - 43 years of age, eight were female and one was a male. Four of the nine had taught in private schools for between 1 to 6 years.

The research Assistants were identified and selected cooperatively by the VCUSD Director of Professional Development and the RRF on the basis of interest and ability to function effectively as a liaison. Both of the RAs were female.

Figure 2

Time Line of Procedures (Interventions)

Procedures	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
	←----------Phase One----------							--Phase Two ------→			
Sample Selection	xxxxxxxxxxx							ooooo			
3-day Training						x				o	
Student Teaching Placement						xxxxxxxxxxxxxx			ooooooooo		
Observations pre-mid-post					xx		xx	xx	o		o
Data Analysis							xxxxxx				oo

x indicates dates for first intervention group (CTs and STs).

o indicates dates for second intervention group (same CTs but a new group of STs).

As mentioned previously, the RRF was fortunate in having Thomas Russell at Mills College as a visiting Scholar from Queens University during the RUETE project. Professor Russell's interests and responsibilities at Queens University include teacher preparation. This, along with his particular skill and insight in developing case-study research strategies made his role as an observer/participant a major contribution to the project. As the intervention proceeded it became clear to the RRF that Russell would be the ideal person to conduct interviews with all the participants involved with the RUETE project at the Mills College site. He generously agreed to take time from his crowded schedule to conduct the interviews and write an interpretive case-study of the interviews (Russell, 1984). Some excerpts from that work appear as part of this overall case-study.

The design and implementation of the three-day training for Phase I was done by a collaborative process. The content was primarily related to research findings focusing on the Active Teaching Behaviors (ATB) and Academic Learning Time (ALT). This was agreed upon by members of the RTET, VCUSD administration, the FWLERD project director and members of the Mills College Department of Education. The cooperating teachers and student teachers who volunteered for participation in Phase I also knew the content would be related to those topics.

The actual training was conducted by the RRF, the visiting scholar, a member of the Mills Education Department faculty, and the two RAs, with an introduction to the FWLERD and RUETE presented by the project director. The first day of the training included the overview of the project and a summary of the research related to ALT and ATB. The second day was spent developing skill and reliability in using the ATB measurement instrument through scoring videotapes of classrooms and actual classrooms until reliability was at 85%+. The third day was spent following a similar procedure regarding ALT. There followed a period of debriefing between the teachers and student teachers along with the RAs and other trainers. The cooperating and student teachers then spent some time together brainstorming ways the content presented in the training could be useful in their classrooms, how they would go about assessing each other and planning their own implementation strategies.

Phase I Findings

The first hypothesis for Phase I predicted "Student teachers and cooperating teachers who are trained to assess ALT and ATB will increase their instructional effectiveness in math." This proved somewhat difficult to measure quantitatively. What we did was to assess two sources of information; the first being

the ATB data collected by the RAs on cooperating and student teachers in the participating classrooms (pre - post for both the student teacher and cooperating teacher while they were teaching math). The interview data collected by Russell (1984), along with the statements written by both cooperating and student teachers contributed to information related to the first hypothesis.

A comparison of the pre - post data conducted at the end of Phase I and related to ATB for the cooperating teachers across the four categories of the ATB observation instrument (Introduction, Instruction, Closure, and Maintenance/discipline) was generally equivocal. There were virtually no changes in the amount of Maintenance behaviors, and only slight increases in Instruction and Closure, and a slight decrease in Introduction. When the cooperating teachers were interviewed about their perceptions of any changes in their teaching behaviors, they indicated their realization that the ATB instrument was geared primarily toward whole-group instruction (which was not, for three of the five cooperating teachers their "usual" teaching style). One teacher indicated that the training/intervention (particularly ATB) had "strengthened my direct teaching", that teacher also reported now "requiring more attention f students".

Comparisons of pre - post data related to the ATB for student teachers in Phase I across the four categories of the ATB instrument indicate a rather dramatic increase in the student teachers' attention to the Introduction phase of a math lesson. The other categories (Instruction, Closure and Maintenance) remained about the same from pre to post observations. In the interviews, the student teachers were more interested in utilizing ATB data for the improvement of their own teaching. They were particularly interested in the Introduction and Closure parts of a lesson, and saw the Maintenance section in a negative light, "if you could teach well enough there shouldn't be any discipline problems" was a common theme.

In general, although there did not seem to be any dramatic shifts in the data related to the active teaching behaviors according to data collected by the RAs and analyzed using a chi square statistic, the interviews indicated that both the student teachers and cooperating teachers believed their teaching had changed somewhat. Both groups believed that they had become more planful in viewing lessons and planning lessons that paid attention to including the three instructional categories (Introduction, Instruction and Closure) related to ATB as assessed in the Teacher Instructional Behavior Record (TIBR) developed by the FWLERD and RTET. This evidence was resultant from the interviews of the two groups.

The second question/hypothesis for Phase I predicted that "Student teachers and cooperating teachers who are trained to assess ALT and ATB will increase the ratio of ALT in their math lessons as measured two months after the training session." Again, in this area the results were somewhat equivocal. Although the engagement ratios increased, the task of assessing student accuracy (an important determinant of ALT) proved very difficult on a minute-by-minute basis. This was true whether the student teacher or cooperating teacher was teaching. The slim data did indicate a slight trend toward increases in the ratio of ALT.

In Russell's interviews (1984) related to the questions, hypotheses and goals of Phases I & II it was found that in terms of the ALT information, the cooperating teachers found this information of more use than did the student teachers. The student teachers found it useful on rare occasions as a "reality check", while the cooperating teachers found it particularly useful when related to their teaching behaviors. This dichotomy between the student teachers and cooperating teachers will be more fully discussed in the epilogue section of this paper.

The third question/hypothesis addressed in Phase I predicted; "Increased knowledge of research related to ALT and ATB will change the supervision of student teachers by their cooperating teachers through: specificity of feedback; increased reciprocity

of feedback between the cooperating teacher and the student teacher; and, common lexicon related to the feedback". This was the question of most interest to the RRF in terms of the preparation of elementary teachers. During the training for Phase I, when the student teachers and cooperating teachers were introduced to the ALT and ATB concepts and given practice in coding the related categories on the TIBR instrument, the goal was for cooperating teacher and student teacher to code each other and to discuss the resulting data in their conferences. This was intended to actualize the concepts of "parity" and "reciprocity" in one of their concrete forms.

The interviews with the cooperating teachers indicated that the TIBR forms for coding ATB, and the coding sheets for ALT were useful, in general terms. One of the cooperating teachers indicated that the forms provided (and perhaps demanded) more structure than was required for providing usable feedback. The other three cooperating teachers found the TIBR and ALT forms quite useful in a direct sense. One of the cooperating teachers welcomed the fact that the information on the forms provided "content" for the after-school discussions with the student teacher. Another cooperating teacher indicated that the information on the forms assisted the student teacher's developing stages of confidence and perspectives on the classroom. Yet another cooperating teacher comment had to do with

the fact that the forms selected out specific issues, such as "questions" or "control" helping the cooperating teacher and student teacher to focus and discuss one thing at a time rather than "everything at once".

The student teachers viewed the forms (for ALT & ATB) as providing "content" for their discussions with their cooperating teachers. When interviewed at the end of the project however, the student teachers involved with Phase I expressed some sadness in the fact that they were not able to continue the dialog related to ALT and ATB in their next (non-RUETE) placements. The student teachers in Phase I saw the experience of having a common training with their experienced cooperating teachers, and the subsequent focused discussions as helping to create a more personal bond with their cooperating teachers.

Phase II Findings

The first prediction/hypothesis for Phase II stated that; "Student teachers who have been trained by cooperating teachers to assess ALT and ATB will apply the knowledge to improve their instructional effectiveness in teaching math. (This is projected since: a. these new cohorts have already had a semester of student teaching, and b. since the cooperating teachers helped design the training, the cooperating teachers have a high level of committment to the student teachers' performance.)

A comparison of pre - post data related to ATB for the Phase II student teachers, although somewhat equivocal, points toward an increase of introductory and closure category behaviors, and a decrease in management category behaviors, a rather idealized profile. The student teachers indicated in the interviews, that the placement time (6 weeks) was too short a period to feel very competent with the ATB concepts in the planning of day-to-day classroom teaching. The cooperating teachers echoed this viewpoint. One of the Phase II student teachers said, "The first time I saw it (ATB forms) done on me, I was surprised to see all these things come out in the lesson that I had not planned deliberately to have there. I think it is useful to have it written down in a clear way to draw people's attention to various categories. I do think it's useful to have down in black and white, to have something to refer back to if you're at a loss at some point, if you feel something is lacking or 'what could I add?' It's probably there." However, the same student teacher also commented "I found it really troublesome, to fill out the form (ATB). I felt like I wasn't seeing what I wanted to see, or it didn't come through with me--checking it off." Both of the above quotations from the same student teacher somewhat characterize a continuing questioning of the usefulness of the ALT and ATB observation forms...that is they were viewed as something burdensome to do...but something that payed off in terms of helping the student teacher and cooperating teacher focus on specific identifiable traits and behaviors.

The cooperating teachers, who had at one time suggested revising the forms, also ran into the fact that even though the forms were somewhat burdensome, the data provided from a completed form provided input for reflection and suggestion in upgrading teaching behaviors.

The second hypothesis for Phase II stated; "Cooperating teachers who trained the student teachers will exhibit increases in ATB measures over their measures at the end of Phase I. (This again relates to their involvement in the training procedures and increased "practice" time)."

An analysis/comparison of the cooperating teachers' scores for post Phase I vs post Phase II are essentially equivocal, with only a couple of percentage points either way in each of the four major categories. This stability of the behaviors indicates that there seems to be a point where more is not necessarily better in terms of teachers' perceived benefits from the behaviors. For example more "closure" or more "introduction" is not necessarily indicative of a more effective lesson. Just as in economics there is the principle of deminishing returns, perhaps experienced teachers know when not to use a tool as well as when to use it.

The third hypothesis for Phase II predicted that; "The impact of the training of student teachers by cooperating teachers and the subsequent student teaching placement with those cooperating teachers will develop the student teachers' abilities

for what Russell (1983) labels "reflection-in-action". (It is proposed this interest in reflection will be brought about by the cooperating teacher "modeling" this behavior in using feedback for improving instruction)."

The interviews uniformly indicated that participation in the RUETE project caused them to reflect on their teaching. This was true for both student and cooperating teachers, and for Phase I as well as Phase II. A quote from a Phase I student teacher..."I miss the focused communication that.....and I had in the placement. We had a purpose when we sat down with those forms, first of all to decide which forms to use, and we decided that mutually, and then to review them after a lesson had been taught." Another student teacher mentioned "Again, I was monitoring myself; I wasn't particularly concerned with what they were doing. But again it's like if I know that ....is doing it, certain things click in my mind." A student teacher in Phase II stated "Surprisingly, I found it useful, even though we haven't worked with it that much. I was surprised to find that I have learned from it (using ALT/ATB forms)...but I did see, looking at a profile and then studying it, I found that I was doing some things that relate to an older class, and that helped with a younger class."

In general, it seems that one of the major contributions of the RUETE project as it was implemented at this site, was the increase in thoughtful reflection by both student and cooperating teachers on what and how they taught. Both Phase participants mentioned having specific behaviors to focus upon contributed to their assessments of their own teaching.

Some of the findings the RRF found interesting were the manner different cooperating teachers applied the research information and/or observation instruments to shape their classroom practices. For some of the cooperating teachers the forms were an "interesting competitor" to how they normally worked with student teachers. In some cases this new form/format proved more useful (especially since it was equally familiar to the student teacher) and in some cases the cooperating teacher used their "tried and true" older manner of providing feedback.

Another interest finding was the fact that all six of the student teachers found the ATB data much more informative, interesting, and useful for helping them teach better. On the other hand, all four of the cooperating teachers found the ALT feedback to be useful and very interesting to improving their teaching and reflective thinking. This dichotomy may well be due to career stages of the teachers, where the student teachers are interested in what they are doing, and the more experienced cooperating teachers are interested in how well their students are learning. The popularity of ALT seemed to spread throughout the school, with teachers who were not participating in the RUETE project asking those cooperating teachers who were participating to come in and do ALT profiles on specific students during specific lessons.

The organization of the project as implemented at the school site was designed to be co-invented among the RRF the Project Director, cooperating and student teachers. This format provided some benefits and some costs. Among the benefits were allowing what was learned in Phase I to shape Phase II throughout

the duration of the project in an ongoing way. A perceived cost was the lack of specific time lines and/or requirements other than the scheduled observations of the RAs for collecting ALT and ATB data. It should be noted that both cooperating teachers and student teachers received copies of the ALT and TIBR (ATB) data collected regarding their lessons immediately after it was collected. The comments related to specificity of time lines and requirements are, perhaps, a by-product of the IR&DT model. If, in fact, there is a true collaborative process, it may appear to lack time lines and requirements, as these are developed collaboratively as the project proceeds.

EPILOGUE

Perhaps the most valuable information gained from the Mills College site RUETE project was that by presenting research for application to classrooms by both student teachers and cooperating teachers and inviting them to design how the information could be applied to their classrooms promotes a unique and powerful communication/colleagueship between them. It also provided a context for the reflective process to be applied to making their teaching "better".

The VCUSD which uses a clinical supervision model based on the work of Madeline Hunter as the focus for its staff development seems able to benefit from the information that could be collected relating to ATB using the TIBR instrument. The focus of both is on direct instruction rather than "learning centers" or "open education" formats. The district is currently considering adding components related to ATB and ALT as a result of participation in the RUETE project.

The project has had a substantial impact on the Mills College teacher preparation programs with the secondary (high school) credential program influenced by the work of Russell (1984) and Ponzio and Russell (1984), and the elementary credential program influenced directly by the RUETE proejct. Each of the Mills credential programs including applications of effective instruction research as regular and systematic parts of the program. The RUETE project, as a professional training experience, seems to have become part of the repertoire of toolf found useful to teacher trainers, and to teachers.

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