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ABSTRACT

An effort was made to identify a taxonomy of critical teaching skills to be used in teacher education. A systematic search was undertaken involving a search of the pertinent literature, a categorical listing of skills, the development of criteria for the identification of critical skills, and listing the critical skills necessary for teacher preparation. After the literature search, 132 skills were identified and listed as "pre-active," "interactive," and "post-active." Six screening criteria were established to ensure that the item fit the requirements of a teaching skill and was supported by research. Of the 132 skills, 115 were rejected, usually because the "skill" did not represent an acquired aptitude that could be integrated into teaching through practice and had no generally accepted definition. One appendix lists these skills, and the other defines the identified teaching abilities. A list of questions related to critical abilities of teaching needed for pre-service teacher education is attached. (Contains 102 references.) (SLD)

IDENTIFICATION OF CRITICAL TEACHING ABILITIES

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INTRODUCTION

Today there is a discernible difference between "what is" and "what could be" in teacher education. Preservice teachers are often unaware or poorly informed of explicit teaching skills. As a result preservice teachers might be given insufficient guidelines to follow in their quest to become effective. Teachers who do not conceptualize and refine through practice generic skills of teaching will struggle to become competent practitioners during the early part of their career.

The question is not whether teachers should receive specialized preparation for teaching, but what kind of preparation they should receive. Historically most academicians agree that teachers need to be professionally educated (Cruickshank, 1985). However, little progress will be realized until teacher educators further develop and incorporate into the curriculum a body of recognized teaching skills (Howsam, et al., 1976). Kerlinger (1976) concluded that effective teaching is not commonly agreed upon but posited the view that most experts within the field could agree upon desirable teaching abilities. Garrett (1978) also held the view that educators could define abilities critical to teaching. Gage (1981) called for empirical research to identify these desirable abilities or skills. The position has emerged that the identification of critical teaching skills, by both expert consensus and empirical research, is necessary for the technical improvement of the nation's teaching force.

Numerous individual scholars have offered support for skill development. Broudy (1972) supported the training of skills for test construction, selection of materials, and classroom management. Gage (1972) advocated the development of technical skills such as structuring, responding, and reacting. Traill (1973) promoted the skills of motivation, presentation and communication, small-group and individual instruction, and student evaluation. Cruickshank et al. (1980) and Cruickshank (1987) advocated the use of skill training for problem solving, classroom control, teacher-parent relationships, time management and reflection.

Worchester (1981) analyzed 83 studies and arrived at three general assumptions about effective teaching. Success in teaching is linked to: 1) knowledge of subject matter, 2) sufficient training and 3) abilities linked to effective teaching can be identified by trained observers.

Many who have studied skill development consider it to be integral to professional preparation (Cruickshank & Metcalf, 1990). Medley (1984) and Zahofic (1986) contended that one goal of teacher preparation is to help teachers become more skillful, leading to increased classroom proficiency. Allen and Ryan (1969), calling for a method to bridge the gap between knowledge of teaching/learning and classroom application, suggested a training program in specific skills.

Scholarship, viewpoints, and research, such as discussed above have led to numerous efforts to develop selective skills in teacher education preparation (Bondi, 1970; Hall, 1971; Hurst, 1974; Borg, 1975; and Cruickshank, 1987).

There are two underlying assumptions within skill development. First, knowledge is necessary for good teaching but not sufficient in and of itself. Second, knowledge combined with the ability to master teaching skills will greatly enhance professional success. Research derived from effective teaching studies has been most favorable in providing support for the above assumptions. Underlying the above assumptions is the belief that the performance of the teacher is central to the success of our current educational system

Several instructional alternatives have been put forward that emphasizes skill development. Those supported by research are behavior modification, interaction analysis, inquiry training, microteaching, protocols, reflective teaching, simulations, and teacher effectiveness training.

It would seem professionally advantageous for teacher educator scholars to create some unifying conceptualization or taxonomy of teacher training needs, to provide a map of the territory that might guide curricular and instructional efforts (Cruickshank & Metcalf, 1990). A teacher's education consists of knowledge of many things including general education, the content for their teaching specialty, educational foundations and pedagogy. Unfortunately, pedagogical knowledge is not enough. Teachers need more than knowledge of what they must do to be successful. They need to acquire specific performance skills. For example, in classes in pedagogy, preservice teachers are provided substantial knowledge of effective teaching behaviors. To illustrate, they are told that in order to be effective instructors, they must be clear. However, it is very unlikely they will be given the opportunity to obtain the skills

necessary, that is, be ' provided with some kind of regimen in order that they will learn to perform that skill. A first step toward improved teacher training is to identify and validate critical teaching skills that are known or believed to be critical. Teacher educators must focus on these few select skills and create a taxonomy of critical teaching skills to improve the quality of teacher education.

Background of the Study

Research efforts to identify teacher skills deemed to be effective began as early as 1900 (Eliena, Stevenson, and Webb, 1961). These early efforts mostly looked for relationships between administration ratings of teaching and teacher traits, characteristics, or personality factors such as gender, marital status, intelligence, buoyancy, enthusiasm and emotional stability, among others (Cruickshank, 1985). Beginning with the 1960's a flurry of research related to teaching and schooling was published in 1966 under the title of Equality of Educational Opportunity by the U.S. Department of Health, Education, and Welfare (Cruickshank, 1990). This report, commonly called the Coleman Report, concluded that schools and teachers did not make much of a difference in the achievement of students. The response to the Coleman Report began the second era of research looking at the relationship between teacher behavior and student learning. This second era, often called "process-product" research, examined the process; teacher behavior, and its effect on product; student learning, has and continues to provide much knowledge of behaviors and practices common to teachers whose learners achieve at higher levels (Metcalf, 1989).

A review of research on teacher effectiveness during the 1970's and 1980's focused on the identification of skills that were present or operative when pupils were succeeding. Rosenshine and Furst (1971) identified teacher behaviors consistently associated with pupil learning. Gage (1972) identified correlates of teaching effectiveness that could be included in a Stanford University experimental teacher education program. Cruickshank (1976) compared and contrasted results of relatively large-scale, federally funded research on teaching. Medley (1977) provided teacher educators access to the research-based findings about effective teaching. Borich (1979) reported the most parsimonious and practical implications for teacher education

based on five process-product studies investigating relationships between teacher behaviors and elementary school pupil achievement on standardized tests in reading and math. Good (1979) summarized what is known about effectiveness among elementary school teachers. Emmer and Evertson (1982) identified what was known about the behavior of teachers who are effective classroom managers. Stallings (1982) reviewed studies that isolated effective strategies for helping low achieving secondary school pupils. Porter and Brophy (1988) synthesized research on good teaching that emphasized the work of the Institute for Research on Teaching at Michigan State University.

As we progress through the 1990's we can no longer regard the preparation of teachers as simply education sans training (Cruickshank and Metcalf, 1990). With the potential development of a knowledge base of identified critical teaching skills teacher educators are in a position in which the profession can demand greater public respect and resources to educate the students of tomorrow.

Efforts to identify those skills critical to teaching hold promise for developing a teacher education preservice program that can provide a foundation for the teacher education curriculum, develop commonalty between universities and practicing peers and also re-focus the direction of education.

Significance of the Study

Cruickshank (1985) stated that the professional education component of the traditional modal teacher education curriculum implies "education for a profession" (p.13), and that a knowledge base and regimen of needed (critical) skills, in the context of a true profession, must be agreed upon and used throughout the profession. Ornstein (1981) listed several common characteristics that define a profession; possessing a defined body of knowledge not typical of public possession was considered among the most important.

While support exists that there is a sufficient knowledge base within teacher education (Cruickshank, 1985; Gliessman, 1986) there is still little commonalty among programs. There may be even less knowledge and commonality regarding critical teaching skills or abilities essential to successful teaching.

Determining the status of critical teaching skills within teacher education programs and securing agreement from practicing teachers are necessary preliminaries for developing a hierarchy of skills that can be logically clustered. Ignoring or haphazardly introducing teaching skills at random places our beginning teachers, directly, and our students, indirectly, at-risk. The student teacher needs to have knowledge and opportunities to gain proficiency before actual teaching. Feedback given by cooperating teachers and university supervisors should support and refine previously learned abilities, thereby making progress easier and more meaningful.

A common base of identified and validated teaching skills would serve teacher education well. One benefit of such a project would be commonality. Teacher education units could focus on a few critical skills and share training results thereby increasing the proficiency of future teachers and teacher educators. A second benefit is simplicity. After the identification and validation of these abilities, models could be generated theorizing the elements needed for successful conceptualization and cultivation of each skill. Teacher education units could then collaboratively determine the effect of various presentation modes such as protocols, peer coaching, or traditional training on the acquisition of skills. A third benefit is cost reduction. Having a common set of agreed on skills would reduce redundancy and provide focus, thereby eliminating waste and allowing all financial resources to funnel to a central and valid preparation program. Fourth, a curriculum could be developed that integrates the content for teaching specialties through the foundation developed by the use of the critical teaching abilities. Last, the identification and validation of critical abilities of teaching would strengthen the argument that teaching and the preparation of teachers are professional activities within a profession by lending assistance to the goal of securing a specialized and common body of knowledge and skills.

Justification for this recognized body of knowledge is specifically based on the following points: (1) The causal relationship between teacher performance and skill development needs further investigation; and (2) identification and validation of critical teaching skills is essential for improvement within the field of teacher education.

METHODOLOGY

A systematic search was undertaken involving the following: a search of pertinent literature to identify teaching skills; a categorical listing of these skills; the development of criteria for the identification of critical skills; and listing of the critical skills necessary for teacher preparation.

A review of literature consisted of five sources: (1) ERIC documents; (2) Reader's Guide to Periodical Literature; (3) national surveys; (4) individual scholars; and (5) research on teacher effectiveness. An ERIC search using the descriptors "microteaching", "teaching skills", and "skill development" revealed 125 sources. Using the descriptors "microteaching" and "teacher training" the Readers Guide to Periodical Literature revealed 154 articles on teaching skills.

These five sources yielded a list of generic behaviors, traits, characteristics, and qualities purported to be teaching skills. After eliminating duplications, 132 skills were compiled. To further their understanding and development they were listed under the categories of Preactive, Interactive, and Postactive based on the role each play in a lesson. Many of the skills fit neatly under one category while others fit under more than one. For the sake of simplicity it was decided to list each skill within its predominant category. Items related to the planning stages are placed in the Preactive category. Items related to the delivery of a lesson are placed in the Interactive category and those related to assessment, recording or reflection, are placed in the Postactive category. Items revealed by the literature search are listed in their categories in Appendix A.

After they were categorized a screening process was undertaken to determine which could be considered critical teaching skills. The model for the identification of critical teaching skills consisted of six separate criteria. These screening criteria are as follows:

1. The item fits the definition of a skill as defined by Cruickshank and Metcalf (1990), namely, a developed or acquired aptitude or ability which can be integrated into teaching through practice.
2. The item's definition is generally agreed upon within the profession.
3. The item is a discrete behavior, which is observable and measurable both qualitatively and quantitatively.

4. It is a generic skill applicable to a wide variety of subject areas.
5. The item is mentioned in the reviewed literature.
6. The item is supported by research and is associated with positive student outcomes.

RESULTS

After placing the skills within appropriate categories they were evaluated according to the above six criteria. To be considered a critical skill the item had to meet all criteria. Table I indicates a clustering based on our original designations of preactive, interactive and postactive. The definitions, listed in Appendix B, were used by the author reporting the skills and also satisfy Criteria 2 of the selection process (a generally agreed upon definition).

TABLE I

CRITICAL TEACHING ABILITIES

PRE-ACTIVE

DIAGNOSING SKILL LEVELS
 PRESCRIBING MATERIALS
 DEVELOPING OBJECTIVES

POST-ACTIVE

REFLECTION

INTERACTIVE

ADVANCED ORGANIZERS
 PLANNED REPETITION
 USING EXAMPLES
 WAIT TIME
 FEEDBACK
 QUESTIONING
 REINFORCEMENT
 ASSIGNING HOMEWORK
 SET INDUCTION
 SMOOTHNESS OF TRANSITION
 ENTHUSIASM
 VARIETY OF INSTRUCTION
 TIME MANAGEMENT

By analyzing the various reasons why 115 skills were rejected several observations became apparent. The first and second criteria (an acquired aptitude which can be integrated into teaching through practice, and a generally agreed upon definition) when applied, caused the most items to be rejected. Clearly, these two criteria are closely related and are an important step in defining critical skills. The number of items not meeting the first and second criteria was 67. These items did so because they had unclear definitions or no definitions at all. Without a clear definition it

could not be determined whether the behavior being reported was an aptitude that could be developed and integrated into teaching through practice.

Unclear definitions also affected the item's ability to meet the third criteria (observable and measurable). Without a clear operational definition, observation systems cannot be developed to observe and measure the skill in operational settings. The pattern of not meeting the first three criteria was repeated in 58 items. Description is the first step in validating potential critical teaching skills. Cruickshank (1985) has called for sustained efforts to be taken to collect and codify the knowledge we have of teaching and learning. Such a manual should include standardized, operational definitions for teaching skills. The defining process is a prerequisite to observing, measuring and validating a skill.

The researcher also found that items not meeting the first three criteria also typically failed to meet the sixth criteria (supported by research and associated with positive student outcomes). If an item could not be observed or measured validly and reliably then it could not be supported by anything but survey research. The researchers believe that the profession should take on the task of clearly defining these skills and subsequently develop methods for observing and measuring them in educational settings.

A final set of items met all but the sixth criteria. These items were Giving Directions and Instructions, Closure, Demonstration, Non-Verbal Behavior, and Lecturing. Either past research failed to demonstrate that the skill contributes to positive student outcomes or no research has been conducted yet to determine if the item is associated with these outcomes. Continued research on teaching that follows the descriptive, correlational, and experimental loop called for by Duncan and Biddle (1974) will provide evidence to determine if the behavior is a critical teaching skill.

DISCUSSION

Teaching has struggled with the problem of functioning as a semi-profession (Howsam et al., 1976). A profession contains a specialized body of knowledge and skills acquired during a prolonged period of education and training (Schein, 1972). To the extent that the teaching profession has ignored these criteria it has remained a

semi-profession. Efforts like this study can lead the way to developing an authoritative reference for the profession. The validated skills identified here can serve as an action agenda for the numerous stakeholders in education and specifically the domain of teacher education. State governments and accrediting and certification associations can incorporate these skills into their standards for teacher certification. Teacher education units can develop and implement instructional and training experiences designed to help preservice teachers become proficient in abilities critical to competent teaching. They could also embellish the content of general and special methods courses and be used as competencies for assessing student progress in laboratory, clinical and practicum experiences.

Teacher associations and teacher education associations could sponsor workshops focusing on validated teaching skills. Interested individuals and philanthropic associations could fund and undertake research efforts to further define, observe, measure and validate additional skills. Efforts could be directed at creating training experiences that focus on and refine validated skills. The validated skills listed here could be used to update and enrich Microteaching experiences.

Five impediments to the implementation of skills into teacher preparation alternatives have been identified: 1) Many teacher educators are unaware of and have had no experience in developing critical teaching skills. 2) It is difficult to find a place for the development of critical teaching skills in the teacher preparation program. 3) Not all teacher educators see the value of developing critical teaching skills. 4) The development of critical skills is relatively expensive requiring the availability and use of time, facilities, and equipment. 5) Finally, the push to develop critical teaching skills clashes with efforts by other stakeholders to reform teacher education. In spite of these impediments efforts to develop instructional alternatives based on critical teaching skills should continue and provide positive results in better teaching in schools.

A cadre of teachers with the knowledge and skills identified as professional and pertinent would be able to effectively serve the nations youth and adult learners in our schools. In spite of the broad scope, limitations and impediments inherent in this type of effort, the researcher believes the process of identifying and implementing critical skills is essential to both the process and product of preservice teacher education.

Questions Related to what needs to be Known Regarding Critical Abilities of Teaching in Preservice Teacher Education

- 1 - What criteria have been proposed for the identification of critical skills necessary for teacher preparation? What skills, using the criteria developed, can be identified as being critical to teaching? Through a content analysis of available research which skills can be identified as being critical by linkage to positive student outcomes?
- 2 - What are the teaching skills that preservice elementary teachers believe to be critical to teaching?
- 3 - What are the teaching skills that classroom teachers believe to be critical to teaching?
- 4 - What are the teaching skills that teacher educators believe to be critical to teaching?
- 5 - To what extent have preservice elementary teachers within their professional education program received instruction in skills identified as being critical?
- 6 - To what extent have elementary classroom teachers within their professional preparation programs, additional course work, or inservice activities received instruction in skills identified as being critical?
- 7 - To what extent have teacher educators incorporated instruction concerning critical teaching skills within course structure?
- 8 - To what extent have preservice elementary teachers, classroom teachers, and teacher educators used skills identified as being critical within their teaching context?
- 9 - To what extent have teacher educators provided planned opportunities for preservice elementary teachers to use and/or practice skills identified as being critical?
- 10- To what extent has the significance of conceptualization and practice been determined regarding the acquisition and use of critical skills?
- 11- To what extent does the training method or presentation mode (traditional, individual, peer teaching, etc.) influence the acquisition and use of critical teaching skills?

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APPENDIX A

PREACTIVE, INTERACTIVE, POSTACTIVE SKILLS

PREACTIVE SKILLS

Alternative Teacher Responses
Collaboration
Developing Objectives
Developing a Teaching Style
Assessing Prior Knowledge
Reacting
Delegating Responsibility
Classroom Arrangement
Prescribing Materials
Planning Expertise
Role Perception
Organization of Daily Planning

Developing Student Relationships
Designing Affective Behavior
Planned Repetition
Assigning Homework
Constructing Tests
Time Management
Assessing Pupil Needs
Classroom Management
Organization (Clarity)
Structuring
Diagnosing Skill Levels

INTERACTIVE SKILLS

Praise
Verbal behavior
Accepting Feelings
Discussion
Enthusiasm
Giving Directions/Instructions
Giving Affection
Helping Skills
Social Interaction
Teacher/Group Interaction
Interpersonal Skills
Cueing
Higher Order Questions
Reinforcement
Rewarding Students
Variability/Variety
Use of Advanced Organizers
Creating Student Involvement
Recitation
Less Student Initiated Talk
Small Group Instruction
Closure

Set High Expectations
Non-Verbal Behavior
Class Participation
Developing Rapport
Feedback
Lower Order Questions
Human Relations
Information Processing
Interaction
Teacher/Student Interaction
Promoting Interaction
Probing Questions
Divergent Questions
Creating Student Success
Silence (Wait-Time)
Clarity
Discussion
Audio/Video
Student Initiated Talk
Individual Instruction
Using Examples
Concept Teaching

Interactive Skills Continued

Demonstration
Illustration
Laboratory
Presentation
Stimulus Variation
Assessing Student Work
Student Management
Classroom Behavior
Criticize or Justify Authority
Control of Participation
Discipline
Movement Time
Management of Class Time
Use of Material Incentives
Obtaining Attending Behavior
Recognizing
Silent Non-Verbal Cues
Large Group Instruction
Momentum
Consistency in Controlling
Repertory of Control Techniques
Ability to Minimize Disruptions
Overcome Stereotyping of Students
Adjustment to SES
Prompting
Information Processing
Role Playing
Smoothness Within Lesson
Student Awareness

Focusing
Lecturing
Motivation
Set Induction
Administer Tests
Thinking Skills
Decision Making
Critical Thinking
Developing Inferences
Development of Hypotheses
Problem Solving
Testing of Hypotheses
Value Analysis
Practice Time
Listening
Assessing Skills
With-itness
Mild Forms of Punishment
Overlappingness
Time on Task Persistency
Seat Work
maintain Relaxed Atmosphere
Adjustment of Development Levels
Maintenance of Success Standards
Variety of Instruction
Setting a Model
Smoothness of Transitions
Re-direction
Fluency in Asking Questions

POSTACTIVE SKILLS

Assessment of Non-verbal Skills
Analyzing Pupil Information
Reflection
Accountability

Teacher-Parent Interaction
Checking
Self-Analysis

APPENDIX B

IDENTIFIED TEACHING ABILITIES (SKILLS) – BEHAVIORAL DEFINITIONS

PRE-ACTIVE TEACHING ABILITIES

Diagnosing skill levels:

The ability to evaluate instructional needs, learning styles and identify instructional strategies geared to meet the needs of the pupil. Emphasis is placed upon identifying the students instructional level, strengths and weaknesses, and preferred learning modality (Bureau of elementary and Secondary Education, 1974).

Developing Objectives:

The ability to develop planned learning or behavioral outcomes that are part of a general overall program. Such outcomes may be broad, but are usually narrow and stated in behavioral terms. Such behavioral objectives contain time limits, learner criteria, and standards for measurement. (Deinozka 8, Kapel, 1982).

Prescribing Materials:

The ability to develop directions and describe how to carry out the directions for learning situations. A formula for each student based upon the diagnostic data emphasizing instructional level, strengths and weaknesses, and learning modal. (Bureau of Elementary and Secondary Education, 1974).

INTERACTIVE TEACHING ABILITIES

Variety of Instruction:

The ability to vary instructional procedures and materials provided to students and vary the cognitive level of discourse and student task (Rosenshine & Furst, 1971).

Time Management:

The ability to efficiently make assignments and dispense materials resulting in more instructional time (Stallings, 1982).

Advanced Organizers:

An ability to provide an overview of new material, write important concepts on the board, repeat and summarize material to be presented. This presentation is essential for stressing important concepts and making learning more meaningful (AECT Task Force, 1977).

Planned Repetition:

The ability to provide teaching situations which encourage over learning and relearning (Allen, Ryan, Bush & Cooper, 1969). A reemphasizing of main points (Edwards, 1975).

Using Examples:

The ability to start with simple examples that are within the range of student's experience and knowledge and proceed to relevant examples to sharpen student understanding: prudent use of examples that clarify, illustrate, and substantiate an idea (Allen, Ryan, Bush & Cooper, 1969).

Feedback:

The ability to provide information to an individual about a particular aspect about his/her behavior or academic performance. Effective feedback is precise, frequent, immediate, differential and positive (Cooper, Heron & Heward, 1987).

Questioning:

The ability to ask a question to obtain student's level of understanding of the content. Lower level questions employ the ability of asking factual, single answer questions with smoothness and ease requiring memory responses or sensory description (Allen, Ryan, Bush & Cooper, 1969). Divergent questions provide for more than one possible response. These questions require the student to use concrete and abstract thinking in order to determine appropriate response. Probing questions require the student to defend his/her answer, make comparisons, draw inferences and think. Higher order questions involve the ability to ask questions requiring abstract thinking and the ability to relate facts in meaningful patterns to compare and contrast concepts or principles, make inferences and perceive cause/effect (Allen, Ryan, Bush & Cooper, 1969).

Reinforcement:

The ability to provide appropriate verbal and non-verbal techniques following appropriate student responses. A response which attributes success to student effort and ability. (Allen, Ryan, Bush & Cooper, 1969).

Assigning Homework:

The ability to provide varied, interesting, motivating, and challenging assignments and yet enable students time to practice work at a near 100% success rate which enhances a teacher's ability to hold students accountable for their work through consistent examining and monitoring in order to provide feedback and follow-up (Brophy and Good, 1986).

Set Induction:

The ability to focus the student's attention on some familiar person, object, event, condition, or idea, that establishes a point of reference around which the student and teacher communicate which stimulates an interest directly relating to the lesson (Allen, Ryan, Bush & Cooper, 1969).

Smoothness of Transition:

The ability of a teacher to move from one activity to another without being distracted by irrelevant matters (Dunkin & Biddle, 1974).

Enthusiasm:

The ability of a teacher to use: voice inflection in large changes of rate or volume in his/her speech; gestures which use hands and arms in coordination with verbal content; and facial movements communicating happiness and amusement which have an influence on student outcomes (Collins, 1976).

POSTACTIVETEACHING ABILITIES**Reflection:**

The ability to increase teacher wisdom by engaging in introspection in a manner which enhances thought about the improvement of subsequent performance through examination of his/her situation, behavior, practices, effectiveness, and accomplishments (Cruickshank, 1975).



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