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A METHOD FOR CLASSIFYING STUDENT TEACHERS' CONCEPTUAL RESPONSES TO EDUCATIONAL EVENTS

The University of Oklahoma PH.D. 1983

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GRADUATE COLLEGE

A METHOD FOR CLASSIFYING STUDENT TEACHERS' CONCEPTUAL RESPONSES TO EDUCATIONAL EVENTS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

CHERLYN SUNFLOWER

Norman, Oklahoma

1983

A METHOD FOR CLASSIFYING

STUDENT TEACHERS' CONCEPTUAL RESPONSES

TO EDUCATIONAL EVENTS

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A METHOD FOR CLASSIFYING STUDENT TEACHERS' CONCEPTUAL RESPONSES TO EDUCATIONAL EVENTS

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An objective and quantifiable method for collecting information on student teachers' conceptual responses to educational events was developed and initial steps were taken to establish validity and reliability. It was named the PeeC Method. Through a review of the literature on cognitive development, four constructs were identified: how many elements a student teacher perceived and/or recalled about an educational event; what kinds of elements in an educational event were perceived; whether the student teacher merely reported his/her perceptions or if meaningful relationships were constructed; and who or what was designated as responsible for what occurred. These constructs served as the basis for the dimensions of the PeeC Method: Thought Unit, Source, Type of Thought, and Attribution.

The development of the PeeC Method involved the collection of student teachers' written comments about educational events and a three phase content analysis procedure for testing the categories within the four PeeC dimensions. An analysis of the data indicated that the dimension categories, category definitions, and category examples within each PeeC dimension were reliable as evidenced by the investigator's ability to classify written comments across two time periods with over 80% consistency; exhaustive as evidenced by raters' ability to classify all written comments of student teachers; and reliable as well

as mutually exclusive such that two different groups of three raters achieved over 80% agreement when classifying written comments.

The PeeC Method was found to be a reliable tool for acquiring information in quantifiable form about the student teachers' conceptual responses to educational events. Further reliability studies will be necessary to determine if similar results will be obtained when the PeeC Method is used by other raters using written comments from different student teachers or written comments from teachers currently in the field. Validity was preliminarily addressed by basing the PeeC dimensions and categories upon current literature on cognitive development. Construct and concurrent validity studies will be necessary to further validate the PeeC Method as a means for quantifying student teachers' conceptual responses to educational events. Once these studies are successfully completed, data collected using the PeeC Method may enable teacher educators and supervisors to document student teachers' and teachers' conceptual growth and tailor interventions to their stages of cognitive development, amount of experience, and degree of maturity.

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> It is only by risking our persons from one hour to another that we live at all. And often enough our faith beforehand in an uncertain result is the only thing that makes the results come true.
>
> William James

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A METHOD FOR CLASSIFYING STUDENT TEACHERS' CONCEPTUAL RESPONSES TO EDUCATIONAL EVENTS

CHAPTER I

INTRODUCTION

Research concerning teacher effectiveness has shifted in focus over the last fifty years. Before 1950, researchers attempted to differentiate effective from ineffective teachers by investigating characteristics such as attitudes, personality, interests, and demographic variables (Rosenshine, 1979). The research from 1950 to 1970 focused on teacher-student interactions, teachers' style or pattern of teaching, and classroom climate (Medley, 1979). In a review of this latter period, Rosenshine and Furst (1973) reported finding 120 observation systems developed by researchers which provided means for describing how teachers interacted with pupils. Starting about 1970 the focus of research on teacher effectiveness shifted to teachers' task-oriented behaviors which produced pupils' engagement in academically relevant tasks (Rosenshine, 1979) and to teachers' mastery of a repertoire of competencies (Medley, 1979).

As effective teaching behaviors were being studied and while teachers were being taught to observe their own behavior (Amidon & Giammatteo, 1965),

the when and why decisions that effective teachers made began to concern researchers The need for this change in research focus was noticed much earlier. Flanders (1967) pointed out the need to prepare teachers who could reflect on their own teaching behaviors and who could make their own decisions about what changes were necessary to improve instruction and promote pupils' growth:

> The most effective changes in method of instruction occur when a teacher can compare what he (she) wanted to accomplish with a nonthreatening, objective summarization of his (her) spontaneous behavior. Using proper procedures, the teacher can make his (her) own conclusions about what changes would reduce any descrepency between intent and performance. (pp. 237-238)

More recently Medley and Crook (1981) supported this view and indicated that it was not just teacher behaviors that were important to teaching effectiveness, but also the decisions teachers made that were critical.

Work by Hersey and Blanchard (1977), two researchers in the business world, identified differences in individuals' conceptual and motivational responses to their jobs. Out of this research Hersey and Blanchard identified a concept and named it task maturity. This concept referred to the willingness and ability of individuals to direct their own behaviors while working on a particular objective or responsibility. The Maturity Scale (Hambleton, Blanchard, & Hersey, 1977) was constructed to enable supervisors to estimate workers' task maturity based upon past experience, job knowledge, problem solving ability, ability and willingness to take responsibility, achievement motivation, persistence, work attitude, and independence.

Glickman (1981a) developed a method, similiar to the Maturity Scale (Hambleton et al., 1977), to identify teachers' conceptual and motivational responses to their teaching. Glickman's method provided supervisory personnel with a means to evaluate teachers' ability to think abstractly and teachers'

commitment. The abstract thinking scale was designed to determine teachers' level of knowledge, ability to generate possible solutions, and ability to develop a plan of action. The commitment scale was designed to evaluate teachers' degree of concern for pupils and their willingness to expend the extra time and energy necessary to implement action plans. Glickman believed that these two areas were critical to teachers' effectiveness.

While Hambleton, Hersey, and Blanchard's method (1977) and Glickman's method (1981a) have provided valuable insights into workers' and teachers' differences in conceptual and motivational responses to their jobs, both methods lack in the investigator's judgement an objective and quantifiable means for observing teachers' conceptual responses to specific educational events. This information is necessary in order to describe and perhaps better understand teachers' thinking that occurs before, during, and after educational events.

Statement of the Problem

An objective and quantifiable method for collecting information on teachers' conceptual responses to educational events was needed.

Purpose

The purpose of this study was to develop a method for classifying the written comments of student teachers so that their conceptual responses to educational events could be quantified. The method was named the PeeC Method.

Research Questions

Six research questions guided the development of the PeeC Method:

1. What are the dimensions for quantifying student teachers' conceptual responses to educational events?

2. Within each dimension what are the categories and category definitions into which student teachers' written responses can be classified?

3. Are the categories within each dimension exhaustive such that the investigator and raters are able to classify all student teachers' written comments about educational events?

4. Given the theoretical base for a dimension, the dimension category definitions, and category examples, is the investigator able to classify the student teachers' written comments with 80% consistency across time?

5. Given the category definitions, category examples and selected written comments are three raters able to classify the student teachers' written comments with 80% accuracy of classification with the investigator and previous raters?

6. Given the category definitions, category examples, and unselected written comments, are three raters able to classify the student teachers' written comments with 80% interrater agreement on categories within a dimension?

Method Development Goals

The development of the PeeC Method involved a three phase procedure. The goals of Phase I were to develop a method with a theoretical base for classifying student teachers' written comments concerning educational events and to establish consistency across time. The goal of Phase II and III were to establish interrater reliability within the PeeC dimensions.

Definition of Terms

In this study the investigator used several terms in a specific manner. Those terms and their meaning are given below:

Student Teacher. A student teacher is a student enrolled in a school of education who is assigned full time to assist a classroom teacher in a school situation.

Task Maturity. Task maturity refers to a person's ability to reason about the job and the person's commitment to the particular job (Hersey & Blanchard, 1977).

Cognitive Development. Cognitive development is an individual's increasing complexity of perceiving and conceiving.

Cognitive Processing. Cognitive processing is the manner through which an individual obtains information and/or conceptual understanding.

Conceptual Schematas. Conceptual schemata are the psychological meanings which influence perception, recall, and organization of an individual's information.

Educational Event. Educational event refers to the teaching and learning that occurs (or fails to occur) in a classroom as well as the physical and social environment of the classroom during a particular interval of time.

Lesson Analysis. Lesson analysis a set of written comments from one student teacher following a particular educational event.

Written Comments. Written comments are the sentences and sentence fragments student teachers wrote following educational events for which they were responsible.

Classified Comment. A classified comment is a sentence or sentence fragment in statement form about an educational event or past/future educational events.

Dimension. Dimension is a construct which the literature suggests may be related to task maturity.

Categories. Categories are the mutually exclusive and exhaustive subsets within each dimension of the PeeC Method.

Thought Unit. Thought Unit is a dimension of the PeeC Method. Thought Units are the separate aspects of the educational event which appear in clause, sentence, or sentence fragment form in the classified comments of a student teacher.

Source of Thought. Source is a dimension of the PeeC Method. Source is the classification of the subject of each Thought Unit in a classified comment by topic.

Type of Thought. Type of Thought is a dimension of the PeeC Method. Type of Thought is the classification of each classified comment by whether or not a relationship is explored within or between Thought Units.

Attribution. Attribution is a dimension of the PeeC Method. Attribution is the determination of whether or not the student teacher's effort is designated in a classified comment as responsible for the educational event.

CHAPTER II

REVIEW OF THE LITERATURE

Through a review of the literature on the cognitive processing and conceptual schemata of adults and children four constructs were identified which might be useful in collecting information on student teachers' conceptual responses to educational events. The theoretical base for the four PeeC dimensions, Thought Units, Source, Type of Thought, and Attribution, will be reported. Next the literature on the research procedure that was used to develop the PeeC method will be presented.

Thought Units

In reviewing the literature on cognitive processing, one construct which appeared useful in collecting information on teachers' conceptual responses to educational events was how much of a situation or problem an individual perceived and/or recalled. The separate elements or variables in a situation or problem that were perceived and recalled were named Thought Units. Work by Winne and Marx (1979), Muuss (1982), Case (1978), Hunt (1971), Glickman (1981), Larkin and Reif (1976), Miller (1956), Levelt (1970), Case and Kurland (1965), Anderson and Lee (1975), Hunt (1965), Renner, Prickett, and Renner (1977), and Gottschalk and Gleser (1969) contributed to the information base for the Thought

Unit dimension of the PeeC Method. Four areas related to the development of the Thought Unit dimension were reviewed: development of perceptions, individual differences in perceptual abilities, perceptual training, and means for enumerating perceptual differentiations.

Development of Perceptions

Perception was considered by Winne and Marx (1979) to be the extraction of information from the environment. The result of this extraction of information was that part, but not all, of the information within an individual's immediate environment was perceived. The information that was perceived tended to be what was psychologically meaningful to the individual and only part of the total information that was available (Winne & Marx, 1979). The rest of the information was lost. According to Winne and Marx while the information that was saved may or may not have been accurate, the individual's behavior was based upon it.

A particular area of perception, social cognition (Muuss, 1982), consisted of the perceptions people had about other people and themselves (i.e., their social world). Information about social situations has been found to be acquired in the same manner as information about the physical world that is through observations, trial and error experiences, exploration, and discovery (Muuss, 1982). According to Muuss, the major difference between the social and physical worlds was that acquired information of the physical world was generally objective and could be proven or disproven whereas acquired information knowledge of the social world was often determined by social and cultural norms or was situation specific. Therefore social knowledge was less uniform, less predictable, and more complex to perceive and understand than physical phenomena (Muuss, 1982). Since teachers deal with perceptions of the social world of the classroom,

it appeared important to note the difficulty of comprehending this kind of information.

Individual Differences in Perceptual Abilities

Case (1978) reported that most children 11 to 12 years of age could hold at least five pieces of information (perceptions) in their minds while working on a problem. This ability was found to be a function of the age of children as well as their degree of experience with a problem. Case reported that for children to solve a problem in a formal operational manner they had to hold more pieces of information in their minds than were necessary to solve a problem in a concrete operational manner. In addition to holding more data, before the children could reason about which variables affected outcomes, they had to know what variables in a particular situation were important. Some children were able to reason in a formal operational manner, but performed in a concrete operational manner due to not having enough experience to remember what occurred or enough experience to identify relevant variables.

Hunt (1971) when studying both children's and adult's development found that the number of different elements of a problem a person perceived and the degree of vagueness or specificity of the elements that were identified differed considerably among individuals. This difference in ability to distinguish different elements in a situation along with the person's ability to put the elements together was used by Hunt to determine the person's degree of cognitive complexity. Hunt suggested that identifying an individual's stage of cognitive complexity was necessary in order that environments could be created to facilitate growth.

Glickman (1981b) found that the number of characteristics teachers reported seeing in a teaching problem varied. Some teachers focused on singular

characteristics of a teaching problem and some teachers perceived multiple characteristics of a problem. Those teachers who perceived more aspects of a problem tended to be "more effective in clarifying his or her own instructional problems (management, discipline, record keeping, organization, student attitudes), determining alternative solutions to these problems, and then planning a course of action" (Glickman, 1981a).

Perceptual Training

Larkin and Reif (1976) compared perceptually trained students with non-trained students in terms of their ability to learn material from a textbook and to solve problems in physics and economic courses. They found that students who were trained to identify information provided in a problem, discriminate relevant from irrelevant data according to a criterion, and establish some psychological meaning for the information outperformed the untrained students. Larkin and Reif concluded that students could be trained to use a strategy for selecting information from their environment and that perceptual training appeared to aid students in selecting information from problems which they might not have noticed if the information had not been provided ahead of time.

The Institute for Staff Development (1965) developed a curriculum for improving students' (K-6) cognitive skills. Program A of the curriculum was designed to teach students to identify and select information from their environment. Observation and data collecting strategies were designed to focus students' attention on similarities and differences of objects, people, and events within the enviroment. Since it was noted that the observation and recollection of single attributes was easier for students than the observation and recollection of multiple attributes and since most objects, people, and events are multi-faceted, one goal of the curriculum was the development of an awareness of the

diversity and complexity of objects, people and events. No data on the effectiveness of this program were found.

Hunt (1971) has proposed a teacher training program to increase teachers' abilities to purposefully exhibit a wide range of teaching styles under differentially appropriate circumstances. In order to achieve this flexibility, Hunt suggested teachers needed skills in discriminating, skills in radiating environments, and skills in flexible modulation from one environment to another. Skill in discrimination consisted of discriminating various teaching and learning environments, discriminating various teacher behaviors, and discriminating pupil characteristics. Hunt suggested teachers needed perceptual training in each of these areas as a basis for developing the ability to radiate teaching/learning enviroments appropriately.

Summary of Literature Related to Thought Units

Individuals were not able to use all the information surrounding them, so they selectively perceived what was meaningful to them (Winne & Marx, 1979). The degree of differentiation that was made varied from one individual to another depending on age (Case, 1978) as well as intellectual abilities and experience (Case, 1972; Hunt, 1971; Glickman, 1981b). Social phenomena were more complex to perceive and understand than phenomena of the physical world (Muuss, 1982). Individuals could be trained to select information from their environment (Larkin & Rief, 1976). Training teachers to discriminate elements within their teaching situations was one part of increasing teaching flexibility (Hunt, 1971). Thus, the number of elements of a situation (Thought Units) which a person differentiated (perceived and/or recalled) appeared to be one construct useful in collecting information on teachers' conceptual responses to educational events. Also the number of Thought Units a person had about a particular

subject appeared to be at least partially related to their stage of cognitive development and amount of experience.

Means for Enumerating Perceptual Differentiations

Miller (1956) found that individuals had a limited amount of short-term memory and that from five to nine bits of information could be manipulated at one time. Miller called a unit of immediate memory a chunk. He reported that a large amount of information could be stored into a very limited number of chunks. Miller further indicated that language was a system by which chunks could be decoded and encoded. Since Miller's original work, several approaches have been used to gain information on and measure individuals' abilities to decode, store, and encode information. Chunks that have been studied have included phrases, words, clauses, and sentences.

Case and Kurland (1965) investigated the number of chunks into which children segmented a variety of sentences (i.e., children's subjective organization of speech). Using a finish the sentence technique, they examined the short term memory capacity which was needed for verbatim recalled. Case and Kurland found that children's short-term memory of phrases within sentences (with number of words held constant) corresponded to the length of their short-term memory spans. Memory span was determined by the number of independent words (e.g., cow, two, house) the children could repeat. When the number of phrases in a sentence was equal to the children's memory spans, the sentences were remembered verbatim. When the number of phrases was increased, the children remembered only portions of the sentences (Case & Kurland, 1965).

Levelt (1970) measured chunking in listeners' sentence understanding and sentence recall. Sentences into which noise was embedded were presented to undergraduate psychology students. The subjects were instructed to listen

carefully to each sentence and then to write down what they had heard. Which words in a sentence were correctly recalled and the relationships of these words to other words in the sentence were figured. Levelt concluded that recall of words within a sentence was at least partially based on the listeners' grammatical knowledge of syntax.

Anderson and Lee (1975) investigated the transmission of knowledge from science teachers to ninth and tenth grade students in terms of the effects communication structure had on the students' acquisition (reception and storage) of the information. Anderson and Lee divided teachers' communications to students into a sequence of discourse units. A discourse unit was defined "as a statement containing a single complete thought equivalent to a single clause -the simplest form of a sentence" (Anderson & Lee, 1975, p. 130). Next each discourse unit was further examined to identify substantive words. A substantive word was defined "as a word for an object, a concept, a class of things, or a process" (Anderson & Lee, 1975, p. 130). Finally, a communication passage was prepared with a moderately high structure (i.e., with clearly discernible linking ideas via substantive words between discourse units) and another passage of the same content was prepared with a low structure (i.e., with a reduced amount of linking ideas between consecutive discourse units). Subjects listened to one of the two recorded passages and then wrote down as many of the ideas as they could recall. Anderson and Lee found that the degree of structure in a communication passage was directly related to the amount of information the students recalled.

Hunt (1965) devised a measurable unit of written language to aid in analyzing students' writings. He obtained written samples of 1000 words from students (N=54) in the fourth, eighth, and twelfth grades. He analyzed these

writings for punctuated sentence length, clauses length, subordinate clause ratio to total number of clauses, length of the main clause plus subordinate clauses attached to it or embedded within it (T-unit), mean number of clauses per T-Unit, and mean number of T-Units per sentence. Hunt found that the length of the T-Unit in students' writing was the best predictor of grade level.

Renner, Prickett, and Renner (1977), using the results of Hunt's study, hypothesized that differences in individuals' stages of intellectual development could be determined by examining students' written language. They also hypothesized that the mean length of the T-Units in students' writing would provide a quick and easy method of predicting their stage of intellectual development. Renner and his associates collected a sample of 200 responses to the Geranium Problem from the Piagetian interview. Each response was then classified according to the score the student had received on three tasks of the Piagetian interview: separation of variables, equilibrium in the balance, and chemical combination. Each response was then divided into T-units and number or words per T-unit were counted. Scores on the Piagetian interview were compared to number of words per T-unit. Results indicated that intellectual development stages could not be determined based on calculations of the mean T-Unit length (average number of words per main clause plus subordinate clauses embedded within it or attached to it). In the same study Renner et al. hypothesized that individuals at a formal operational stage might use particular words or phrases not used by individuals operating at other stages of cognitive development. A quantitative analysis of the presence or absence of key words or phrases in students' written responses to science incidents was found to be not useful in predicting level of intellectual development.

Gottschalk (as reported in Gottschalk & Gleser, 1969), explored a number of ways of eliciting and analyzing communication for how a person felt and what a person thought. The forms of communication which he analyzed included rate of speech, frequency and duration of pauses, and number of repetitions. The content of communication which he analyzed included classifying the type and frequency of particular words. Gottschalk's research for indicators of how a person felt and what the person thought gradually shifted to the content within individuals' oral and written language. In developing thematic content categories, Gottschalk began to use the grammatical clause instead of the word as the unit of communication. At this point Gottschalk joined forces with Gleser. Soon after they concluded that the grammatical clause was "the smallest communication unit conveying information in our language about process, agent, and object" (1969, p. 41). Subsequently, Gottschalk and Gleser were able to develop a comprehensive procedure for measuring the psychological state of individuals based upon an analysis of oral and/or written language samples.

After reviewing the literature, it appeared to the investigator that language was a system by which much information was stored and manipulated. When ideas are decoded, stored, and encoded separately, individuals were found to have a limited amount of short term memory (Miller, 1956). Fortunately individuals have the capacity to deal with information in chunks. Children were found to decode, store, and recall words in sentences by chunking the information into phases (Case & Kurland, 1965). When older students decoded or encoded larger amounts of information, words, clauses, and T-Units were used by researchers (Anderson & Lee, 1975; Hunt, 1965; Renner, Prickett, & Renner, 1977) as indicators of individuals' bits of information. Thus the utilization of the

grammatical qualitites of language appeared to be a possible means by which to enumerate perceptual differentiations. Gottschalk and Gleser (1969) developed a procedure for measuring the psychological state of individuals using the thematic content of clauses and sentences as indicators of how the individuals felt and thought. Based upon Gottschalk and Gleser's successful results with adults, clauses and sentences were chosen by the investigator as the most likely means for enumerating the perceptual differentiations of student teachers.

Source of Thought

In reviewing the literature on conceptual schemata, a second construct which appeared useful in collecting information on teachers' conceptual responses to educational events was what kind of elements in a situation or problem an individual selectively perceived and/or recalled. The kind of elements that were selectively perceived in a situation was named Source. Work by Fuller (1969), Adams (1982), Warner (1975), Aspy (1969), Zais (1976), McKibben and Joyce (1981), and Elkind (1967) contributed to the information base for the Source dimension of the PeeC Method. Three areas related to the development of Source dimension were reviewed: the content of teachers' concerns, the basic needs which were believed to be the motivation behind teachers' concerns, and the different forms of egocentrism which were related to the major stages of cognitive growth.

Content of Teachers' Concerns

Fuller researched what motivated teachers and how teachers' concerns changed as they grew professionally. A series of Fuller's studies will be reported. In reviewing the literature from 1932 to 1965, Fuller (1969) found beginning year teachers had five areas of concern. These included concerns

about class control, content adequacy, the situation in which they taught, evaluations by their supervisors, and evaluations by their pupils. Because Fuller questioned whether these concerns were stable across time or developmental, she designed two studies to investigate student teachers' concerns.

Fuller's first study consisted of weekly two hour counseling seminars led by a psychologist. These student teacher seminars were taped, transcripts were made, and every comment in each seminar was tallied by topic. Frequencies of comments by topics across the student teaching semester were analyzed. Fuller (1969) found two type of concerns. Early in the semester, student teachers' concerns dealt with self. Late in the semester concerns dealt with pupils, with pupils' learning, and with how the student teachers could improve pupils' progress.

To further explore student teachers' concerns, Fuller (1969) designed a second study in which written concern statements were collected from student teachers every two weeks for a semester. After bimonthly informal luncheons, the student teachers were asked to write a statement in response to the question "What are you concerned about now?" Responses were grouped into three categories: (a) "Where do I stand? How adequate am I?"; (b) "Problem behavior of pupils. Class control. Why do they do that?"; and (c) "Are the pupils' learning? How does what I do effect their gains?". Across the semester Fuller (1969) found that out of 29 student teachers, 22 expressed concerns with self adequacy, 6 expressed concerns with self adequacy and class control, and none expressed concerns about pupils or what pupils were learning.

Questioning whether these self concerns persisted, Fuller (1969) surveyed the literature on the concerns of experienced teachers and teachers considered by others to be superior. She found that the experienced and superior teachers

were more often concerned with pupil gains and the success of former pupils than inexperienced teachers. These experienced teachers were also less concerned with maintaining discipline and with evaluations by others (adults and pupils) than the experienced teachers.

Based on these findings Fuller (1969) hypothesized that individuals attempting to become teachers progressed through three stages of concern: a pre-teaching stage, a early teaching stage, and a late teaching stage. The pre-teaching stage occurred between the first coursework in education and student teaching. During this period pre-service teachers' concerns were found to consist of a vague anticipation or apprehension about their coming student teaching. Other concerns during this period were not related to teaching (e.g., roommates, finances, etc.). The early teaching stage began during student teaching and extended into the beginning years of teaching. During this period the student teachers' concerns were found to focus primarily with their own performance. The late teaching stage was characteristic of experienced teachers. Experienced teachers' concerns focused more on understanding pupils' capacities, assessing pupils' gains, partialing out the teacher's contribution to pupils' difficulties and/or gains, and self-evaluating in terms of pupils' gains.

Adams (1982) investigated elementary and secondary teachers' perceived problems and concerns across a six year period. Data were collected via self-reports from teachers at four points: during student teaching, and near the end of the first, third, and fifth year of teaching. Adams found the three problems which were reported as most severe included motivating students, teaching disrespectful students, and maintaining discipline. These problems did not change in intensity over the six year period. Adams also found that concerns about developing rapport with students increased until the end of the third year;

secondary teachers' concerns with subject matter adequacy decreased with experience; and there was an increase in perceived problems with administrators, parents, and knowledge of outside resources as the teachers gained experience. Adams concluded that as teachers mature, some problems and concerns changed, while others remained the same.

Building upon his previous research, Adams (1982) developed a self-report device called the Teacher Concern Checklist. This self-report device was used to assess three areas of teachers' concern: (a) self concerns about adults' and pupils' perceptions, (b) task concerns as related to instruction and discipline, and (c) impact concerns as related to pupils' academic well-being and pupils' school environment. Data gathered from this self-report device were compared to data gathered from direct classroom observations and to ratings by pupils, peers, and supervisors. Adams found that as teachers gained experience, there was a decrease in self-adult and self-pupil concerns. These findings agreed with Fuller's results. Adams found an increase in task concerns related to instruction, but no change in task concerns related to discipline. Discipline concerns remained high across all four levels of the teachers' experience. This differed from Fuller's findings, since the latter found that discipline related concerns diminished with time. Adams (1982) also found that pupil impact concerns were the highest of all teacher concerns and that teachers' concerns about pupil impact did not change during the six year study. Adams' findings on impact concerns differed from Fuller's findings. Fuller (1969) did not find student teachers or beginning teachers concerned with their impact on students. Adams attributed the difference to either an error in Fuller's theory (that impact concerns were mostly characteristic of mature teachers) or to the self-report nature of the Teacher Concern Checklist.

It appeared likely to Adams (1982) and the investigator of this study that the self-report nature of the Teacher Concern Checklist may better explain the difference between Adams and Fuller's findings on impact concerns, since it would create a conflict between roles and values for teachers not to check off items indicating concern about pupils. Therefore when teachers are given a open question as "What are you concerned about now?" as in Fuller's studies, teachers would tend to display their most immediate concerns. And when given a checklist asking if they were concerned with pupils' academic well-being and school environment as in Adams research, teachers would feel compelled to check concerns about pupils.

Teachers' Basic Needs

Fuller, reflecting upon her findings about teachers' concerns, asked two important questions: (a) "Is a concern stage a function of the person, of the situation, or both?" (Fuller, 1969, p. 222), and (b) "Can concerns toward self be resolved and concerns about pupils encouraged?" (Fuller, 1969, p. 223). Research using Maslow's theory of human motivation provided some insight into these questions.

Warner (1975) related teachers' concerns as reported by Fuller and other researchers to Maslow's theory of human motivation. Warner suggested that teachers' concerns such as "Where do I stand? and How adequate am I?" were safety and security needs. He suggested that teachers' concerns such as "How do students see me? and How do supervisors and parents see me?" were belonging and esteem needs. And finally, Warner indicated questions such as "What are the pupils learning? and How does my behavior effect pupils?" were self-actualizing concerns. (Warner, 1975, p. 12).

According to Warner (1975), most student teachers were primarily concerned with completing their program and being able to graduate. Student teachers succeeded at this by meeting cooperating teachers' and university supervisors' expectations. Since student teachers needed to present themselves as being in control, pupils' behaviors were often perceived as a threat to reaching the goal of a diploma. Aspy (1969) indicated that the majority of student teachers were concerned with their own survival at a time when they were being asked to give to pupils. Warner (1975) supported Aspy's statement and indicated that most student teachers did not advance beyond the developmental stage of being concerned about how others perceived them.

Warner (1975), applying Maslow's theory of needs hierarchy to pre-service teachers, hypothesized that as basic needs (such as safety and security needs) were satisfied, pre-service teachers would move onto or become aware of higher level needs (such as belonging, esteem, or self-actualizing needs). Warner suggested that early direct experiences with pupils and a close personal relationship with at least one teacher educator had the potential for gratifying a number of safety and belonging concerns of pre-service teachers. Warner recommended that the use of structured observations and microteaching would develop pre-service teachers' technical skills and decision making skills as well as help meet the pre-service teachers' self esteem needs. Warner also proposed that if pre-service teachers were more skilled, they would be less defensive under stress and would have less tendency to copy their cooperating teachers' teaching.

Zais (1969), in discussing Maslow's work, differentiated between individuals who were deficiency-motivated (i.e., motivated by a drive to fulfill a need) and growth-motivated (i.e., individuals who were self-actualizing). Zais described

the motivation of individuals in terms of their relationship to their environment, interpersonal relationships, ego centering or ego transcendence, reaction to learning, and ability to receive perceptions. Zais reported that deficiency-motivated individuals were dependent on their environment and subject to the wishes and demands of others; their relationships were self-interested; they were concerned with the acquisition of their goal objects; and they usually perceived things in one dimension (i.e., good-bad, kind-cruel, etc.) Growth-motivated individuals according to Zais (1976) determined their own behavior on the basis of a more or less accurate perception of reality; they valued people for what they were and not for what they supplied; they were problem-centered; personality changes occurred because they were interested in increasing their insight and understanding; and they perceived reality as multidimensional (i.e., full of dichotomies, polarities, and contradictions).

McKibbin and Joyce (1981) tested the hypothesis that psychological states affect adult learning. The psychological states of a group of experienced teachers were determined through a series of interviews. Teachers' psychological states were identified as one of the following: (a) oriented toward the satisfaction of basic physical needs (such as economic security), (b) oriented toward psychological safety, (c) oriented toward love and belonging, (d) oriented toward achievement, and (e) oriented toward self-actualization (McKibben & Joyce, 1981). At five intervals during the year the teachers were asked to indicate what inservice training activities they had attended and to rate on a scale of 1 to 100 the amount of learning they had transferred to their classrooms. The mean inservice implementation score of the teachers was found to be related to the teachers' psychological states. Teachers whose psycho-

logical states were more self-actualizing had implementation scores 2½ to 3 times greater than the teachers who were striving to meet more basic needs.

McKibben and Joyce (1981) also found differences in teachers' choice of inservice programs. Teachers identified as self-actualizing tended to choose innovative programs. Teachers identified as having more basic needs chose inservice options to help them "do better what they were already doing" (McKibben & Joyce, 1981, p. 253).

Egocentrism Related to Cognitive Growth Stages

According to Elkind (1969) cognitive growth produced a negative by-product which he called egocentrism. Egocentrism referred to a person's lack of differentiation between self and various aspects of the environment. Egocentrism took different forms depending on the person's stage of cognitive growth.

The major cognitive task of the sensory-motor stage according to Elkind was control over objects. The egocentrism associated with this stage was that if a child did not see an object, the object did not exist (Elkind, 1967). As student teachers encounter educational events, they may at first not differentiate between themselves and other things in the environment. This may partially explain their self concerns.

In the pre-operational stage the child was not able to hold two dimensions in mind simultaneously (Elkind, 1967). If student teachers can not conceptually notice two things at once (i.e., their own action and something else that is occurring in the educational event), then this may also explain their initial egocentrism.

The major task of the concrete operational stage (Elkind, 1967) was to master classes and form explanations. The egocentrism associated with this

stage was the child's inability to differentiate between perceptions and mental constructions. According to Elkind when a child constructed a hypothesis, the child assumed that the product was imposed by the data rather than from his/her own mental activity. When the child's hypothesis was challanged he/she did not change position but rather interpreted the data to fit (Elkind, 1967). As student teachers begin to hold two dimensions in mind at the same time and begin to form explanations, their mental constructions often do not match reality. The assumption at the concrete operational stage that the mental product was imposed by the data, may help explain student teachers' strong beliefs in their own explanations.

At the formal operations stage (Elkind, 1967) the adolescent could conceptualize the thoughts of other people and reason about his/her own as well as others' mental constructions. The egocentrism associated with this stage was that the adolescent failed to differentiate between what others were thinking about and his/her own mental constructions. Thus the adolescent was continually constructing or reacting to an imaginary audience. Elkind reported that this imaginary audience was progressively modified in the direction of the real audience and that the adolescent gradually learned to differentiate between his/her own preoccupations and the thoughts of others. As this differentation developed the adolescent was able to increase the accuracy of his or her perceptions. This particular egocentrism may partially explain student teachers' concerns with how significant others see them. As student teachers become able to differentiate between their own mental constructions and those of significant others surrounding them and as student teachers become more accurate in their perceptions, student teachers should become less concerned with how others see them.

Summary of Literature Related to Source of Thought

It appeared from research by Fuller (1969) and Adams (1982) that teachers were concerned with three major subjects: self, significant others, and pupils. The degree to which individuals were self-actualizing influenced the kinds of concerns teachers had (Warner, 1975; Zais, 1976) as well as how much and what kind of information they acquired (McKibben & Joyce, 1981). Also as individuals grew cognitively, their ability to differentiate between themselves and the various aspects of their environment increased (Elkind, 1967). This differentiation appeared to be a connection between individuals' cognitive growth and their developmental concerns (Fuller, 1969; Adams, 1982), basic needs (Warner, 1975), and psychological states (McKibben & Joyce, 1981). Thus, what elements of a situation or problem individuals' perceived and/or recalled (Source of Thought) appeared to be another construct useful in collecting information on teachers' conceptual responses to educational events. Also this construct, upon which the Source dimension was created, appeared to be related to teachers' amount of experience and stage of cognitive development.

Type of Thought

In reviewing the literature on cognitive processing, a third construct which appeared useful in collecting information on teachers' conceptual responses to educational events was how individuals processed information gathered from a situation or problem. Some individuals saw or constructed meaningful relation ships among the pieces of information they had available; other individuals did not. Whether or not a relationship was noticed was named Type of Thought. Work by Zais (1976), Winne and Marx (1979), Piaget (1972), Day (1981), Shayer and Adey (1981), Glassberg (1979), Oja (1979), Glickman (1981a, 1981b), and Borko, Cone, Russo, and Shavelson (1979) contributed to the information base for

the Type of Thought dimension of the PeeC Method. Three areas related to the development of the Type of Thought dimension were reviewed: concep development, developmental differences in cognitive processing, and the effec of training on cognitive processing.

Concept Development

Zais (1976, p. 230) noted "the mind draws together the strands of human experience and makes an individual's life comprehensible." This drawing together of past experiences formed the basis for determining what was noticed what was learned, what was recalled, and what kinds of inferences were made in new situations. Individuals' comprehensions, according to Zais, were either stamped in by parents, teachers, peers, and media or acquired through experiences and critical thinking.

According to Winne and Marx (1979), when individuals extracted information from their environment the result was the collection of some information that did not fit their present understandings (concepts). This new information changed or modified the individuals' existing understandings. The amount of information individuals had and the accuracy of their concepts affected problem solutions.

Developmental Differences in Cognitive Processing

Piaget (1972) proposed four major stages of cognitive development: sensory-motor, pre-operational, concrete operational, and formal operational. Children within a particular stage were found to reason about their world and attempt to solve problems in similar ways. Piaget originally suggested that by age 11 or 12, children left the concrete operational stage and entered the formal operational stage of reasoning. Since then, Piaget has indicated that while most

individuals were able to reach the formal operations stage, they only did so in areas in which they had much experience.

Day (1981) pointed out that people who used formal operational thought patterns on a particular task did not necessarily use this type of thought on other tasks. She indicated that there was a difference between what an individual was capable (i.e., cognitive capacity) and the level of performance which was reached in various areas (i.e., cognitive performance).

According to Shayer and Adey (1981) individuals' developmental interactions with the world could be defined in behavioral terms. Shayer and Adey characterized the pre-operational stage of cognitive development by (a) an individual's believing things to be exactly as they appeared, (b) phenomena being interpreted in terms of self, (c) data not being consistently arranged in an ordered form, (d) elements being linked only on a perceptual or temporal basis, and (e) only one feature being noticed at a time. The early concrete stage was characterized by (a) an individual's registering what happened and being able to report/describe it, (b) knowing "this goes with that", (c) being able to classify by one major criterion at a time, and (d) noticing simple one factor causes (Shayer & Adey, 1981). The late concrete stage was characterized by (a) an individual's finding interest in making and checking cause and effect predictions, (b) reasoning which involved redescribing what occurred, and (c) explaining one dimensional relationships (Shayer & Adey, 1981). The early formal stage was characterized by (a) an individual's manipulation of two variables at the same time, (b) the planning of simple controlled experiments (but needing help in deducing relationships from results and organizing the information so that irrelevant variables were excluded), and (c) the consideration of multiple causes for one effect or multiple effects for one cause (Shayer & Adey, 1981). The late

formal stage was characterized by (a) the individual's interest in generating and checking possible why explanations, (b) thinking of reality in a multivariate way, (c) formulating quantitative relationships between variables, (d) forming and then testing hypotheses against data while holding several variables constant, and (e) interpreting the results from such investigations (Shayer & Adey, 1981).

According to Kelley (1972), when a person reached the formal operational stage, the individual was able to do three important conceptual actions. First the individual could think in terms of possible combinations of causal factors as they related to a given effect. Second the individual was able to plan ways to gather information necessary to control and separate the effects of various possible causal factors. And third the individual was able to draw conclusions about competing causal hypotheses.

Glassberg (1979), after reviewing teachers' development, concluded that teachers at high stages of cognitive development tended to be more adaptive and flexible in teaching style and tended to employ a wider range of teaching methods than teachers at lower stages of cognitive development. Oja (1979), in a similiar review of the literature, found that teachers at higher conceptual levels assumed multiple perspectives, utilized a wider variety of coping behaviors, employed a broader repertoire of teaching models, and were more effective with students than were teachers at lower levels of cognitive development.

Harvey, Hunt, and Schroder (1961) investigated the integrative complexity of individuals' conceptual structures. Harvey et al. found that some individuals operated with limited information which was not well connected (i.e., The individuals saw few relationships among their perceptions). Other individuals

operated with a high level of integrative complexity (i.e., They saw many relationships among their perceptions).

Schroder, Driver, and Steufert (1967) developed a seven point scale for assessing conceptual level. A score of 1 point was awarded if the person presented only one side of a problem while ignoring differences, similarities, and gradations within a problem. A score of 7 points was awarded if the person considered relationships, similarities and differences between sides of a problem and gave multiple reasons why the differnces and similarities occurred. The scale was used to determine individuals' conceptual levels (low complexity, moderate complexity, moderately high complexity, and high complexity) by scoring their written essays.

Glickman (1981b) proposed that a high level of abstract reasoning was essential to teaching effectiveness. According to Glickman (1981a) teachers who did not have a high level of abstract reasoning were limited in finding appropriate courses of action, tended to repeat one or two habitual responses, or defined incomplete plans of action. Teachers with a high level of abstract reasoning ability viewed problems from a number of perspectives, generated many alternate solutions, thought through the advantages and disadvantages of each plan, and changed plans as needed (Glickman, 1981a).

The Effect of Training on Cognitive Processing

Borko, Cone, Russo, and Shavelson after studying teachers' decision making processes viewed teaching "as a process of intergrating all of our (teachers') knowledge and skills into a decision that best suited a situation at any given moment" (1979, p. 154). Borko et al. (1979) reported that differences in teachers' strategies were a result of two factors: the differences in the information (perceptions) to which the teachers' attended and differences in the

inferences that teachers drew based upon their different pieces of information (such as goals for the lesson, beliefs about teaching, information about students, and many other variables). Borko and his associates suggested that "for particular strategies to be successful, teachers should be involved in deciding if and when strategies were appropriate for them and their students" in order to reach particular goals (1979, p. 155). Borko et al. also concluded that "making teachers more aware of (the elements entering into their thinking as well as) their decision-making strategies, might enhance teachers' abilities to make professional decisions" (1979, p. 155).

The Institute for Staff Development (1965) included in its curriculum for improving cognitive skills, training to facilitate students' understanding that things did not just happen but instead came about by reasons that were either observable or unseen. Training in interpreting the meaning of information (perceptions) required grasping links or relationships among the data about: 1) what may have caused what (e.g., "a" caused "b" or both "a" and "c" caused "b"), 2) what may have resulted from what (e.g., "b" happened as a result of "a"), and 3) the implications this may have for other situations (Institute for Staff Development: Program C, 1965, p. 16). Learning to make inferences was seen as important to students' organizing and making sense out of the diverse stimuli which they encountered. One important aspect of the training was that no single cause was sufficient to explain what occurred; instead things typically occurred as a result of a combination of causes rather than as a result of a single cause. Training was thought to be useful for identifying students' basic notions of reality and to be a means for influencing students' abilities to understand how the world works by helping them organize their experiences.

Summary of Literature Related to Type of Thought

Individuals were constantly trying to make sense out of the diverse stimuli that they encountered (Zais, 1976). Adults tended to operate in specific situations in either a concrete operational or formal operational manner depending on their cognitive capacity and their experience (Piaget, 1972; Day, 1981). These stages of cognitive development could be behaviorally defined (Shayer & Adey, 1981). Teachers' level of cognitive development appeared related to their effectiveness (Glassberg, 1979; Oja, 1979; Glickman, 1981a & b). And finally, it has been suggested that training may affect individuals' abilities to make inferences (Borko et al., 1979; Institute for Staff Development, 1965). Thus, how individuals processed information and the ways they attempted to explain/or solve problems (Type of Thought) appeared to be another construct useful in collecting information on teachers' conceptual responses to educational events. Also the construct upon which the Type of Thought dimension was created appeared to be related to teachers' stage of cognitive development and amount of experience.

Attribution

In reviewing the literature on conceptual schemata, a fourth construct which appeared useful in collecting information on teachers' conceptual responses to educational events was the inferences individuals formed about causes. Attribution was considered in the review as who or what was designated as responsibility for what occurred. Work by Weiner (1972, 1980), Bar-Tal (1978), Fitch (1970), Nicholls (1975), Friend and Neale (1972), Tollefson (1982), Pearl and Bryan (1982), Deweck and Repucci (1975), Deweck (1975), deCharms (1972), and Kukla (1972) contributed to the information base for the Attribution dimension of the PeeC Method. Four areas related to the development of the Attribution

dimension were reviewed: the attributional model of achievement behavior, individuals' differences in attributions, attributional effect on performance, and personal causation training.

Attributional Model

Weiner (1972) suggested that individuals' beliefs about the causes of success and failure were important in understanding their behavior. Weiner reported that individuals perceived outcomes in four ways: (a) as a consequence of their own actions; (b) as a result of their abilities; (c) as a result of luck, fate, or powerful others; or (d) as a consequence of task difficulty. Weiner differentiated between attributions that originated within the individual (internal locus of control such as ability and effort) and attributions that originated outside of the person (external locus of control such as luck and task difficulty). Weiner also differentiated between attributions in terms of their changeability over time. Ability and task difficulty were found to be stable attributions and effort and luck were unstable attributions (Weiner, 1972).

Bar-Tal (1978) indicated that individuals' attributions had differential affective effects depending on their locus of control and stability. Bar-Tal found that the locus of control factor influenced a person's affective reaction to success or failure. When the locus of control was internal, success yielded pride reactions and failure yielded shame reactions. External locus of control yielded less pride and shame because personal responsibility was not involved. Bar-Tal reported that the stability factor influenced a person's future predictions of success and failure. If the attributions were stable, success (or failure) experiences led to the belief that more success (or failure) would occur in the future. If the attributions were unstable ones, then the future was seen as unpredictable.

Individuals' Differences in Attributions

A review of the literature indicated that adults and children differ in their characteristic attributions. Often individuals' attributions can be predicted based on their level of self esteem, achievement orientation, sex, race and/or social class, and educational status. Kelley (1972) reported that knowing a certain understanding or schema characterized a particular individual's way of thinking about a problem allowed an observer to make predictions about how that person would interpret limited or partial information.

Fitch (1970) found that level of self-esteem influenced individuals' causal attributions. When individuals with low self-esteem experienced failure, they made more internal attributions than high esteem individuals. Fitch found no difference between low and high esteem individuals in terms of their attributions when they met success.

Bar-Tal (1978) reported that individuals differed in their causal attributions depending upon their achievement needs. Individuals with high achievement needs attributed successes more frequently to abililty and effort and failures to lack of effort and external causes. Individuals with low achievement needs attributed success to external causes and failures to lack of ability.

Nicholls (1975) found individuals' sex often played a role in their causal attributions. Nicholls reported that fourth-grade girls tended to attribute their failures to low ability, yet did not attribute their success to high ability. Boys attributed their failures to lack of effort and their successes to effort. While no research was found to indicate whether this relationship between sex and attributions was true of adults, since most teachers are female, this difference in attributions by sex appears an important one to consider.

Friend and Neale (1972) reported that racial groups and social classes differed in their causal attributions. When the causal attributions of fifth grade students were compared, white students judged ability and effort as a important cause of their performances. Black students judged task difficulty and luck as important to their performance outcomes.

A study by Tollefson, Tracy, Johnsen, Buenning, Farmer, and Barke (1982) was important because it dealt with general attributions as compared to task specific attributions. Tollefson et al. investigated the attributions of learning disabled students as compared to non-learning disabled students. They found that there were no differences in the general attributions of learning disabled and non-learning disabled students on an achievement responsibility questionnaire. However, when the students were given a series of spelling tasks and then asked for their reasons for success and failure on the tasks and the number of words they estimated they could spell correctly on the next set of similiar spelling words, there were significant differences between the groups in terms of their expectancy of future successes. The learning disabled students explained their success and failure by factors other than effort and showed a decreasing level of expectation for future success. Tollefson et al. concluded that this may explain why learning disabled students do not attempt many academic tasks and do not persist on tasks when the task becomes difficult. While a similar study with adults could not be found, it seemed important to notice the differences between the results of the general attribution test and the task specific test since other individuals besides learning disabled students may learn to give socially desirable responses and yet internally attribute success and failure quite differently.

Another research effort dealt with the attributions of significant others (mothers) and individuals' (children's) attributions. Pearl and Bryan (1982) collected data from mothers of learning disabled children and mothers of non-learning disabled children. Three findings resulted from this study. First, the mothers were asked about the reasons for their child's outcomes on three tasks (reading, puzzles, and social situations). Mothers of learning disabled children attributed their child's successes to luck and their failures to lack of ability, while mothers of non-learning disabled children attributed their child's results to effort or lack of effort. Second, the mothers were asked how they believed their child would attribute success and failure in these three situations. The mothers perceived their child's responses would be identical to their own perceptions of causality. Third, the mothers were asked about why home situations ran smoothly or not smoothly. The mothers of the learning disabled children were less likely to attribute success to their to the own ability and more likely to attribute failure to their own lack of ability, than were mothers of non-learning disabled children. This study highlighted the possible impact significant others may have on indivduals' formation of attributions.

Attributional Effect on Performance

According to Weiner (1972), individuals' performance was affected by their attributions in four ways: (a) persistence, (b) intensity, (c) free choice behavior, and (d) choice of task difficulty. According to Bar-Tal (1978) high achievement oriented individuals persisted longer in failure tasks. He hypothesized this was because the individuals attributed failure to lack of effort and/or luck, both of which were changeable. High achievement individuals also worked with higher intensity than low achievement oriented individuals. Bar-Tal hypothesized this was due to high achievement individuals' beliefs that their outcomes were caused

by their own effort. High achievement individuals tended to choose more activities. Bar-Tal hypothesized this was due to their success which caused feelings of pride and which reinforced individuals' ability and effort attributions. Also, high achievement individuals chose intermediate difficulty level tasks. Bar-Tal hypothesized this was because tasks that were too difficult or too easy did not tell the individuals about their performances, but only about the tasks.

Two research studies, one with children and one with adults, have supported Bar-Tal's ideas. Deweck and Repucci (1973) exposed children to repeated failures. The children who persisted longer accepted more responsibility for their results, while children whose performance worsened assumed less personal responsibility for their success and failure. In a similiar study Weiner, Heckhausen, Meyer, and Cook (1972) found that adults' causal attributions were related to their intensity of performance. Weiner exposed his subjects to consecutive failures on a task and asked them to describe what caused their failure. The adults who performed with greater intensity tended to attribute failure to bad luck and lack of effort, both unstable and changeable factors. The adults who approached a task with a low level of intensity attributed failure to lack of ability and task difficulty, both uncontrollable factors.

Personal Causation Training

Personal causation training programs (also called achievement change programs) have been based on the idea that the tendency to form attributions was learned and thus could be altered. Personal causation training programs have attempted to change attributions for failure from low ability attributions to lack of effort attributions (Weiner, 1980).

Deweck (1975) taught children to attribute failure to lack of effort. Results indicated that as the children started attributing failure to insufficient

effort, their performance improved. Deweck concluded that causal attributions affected the childrens' academic performance.

deCharms (1972) taught elementary and junior high teachers to perceive themselves as people who caused their behavior rather than as people who felt something or someone external caused their behavior. deCharms found that when the teachers' attributions changed their motivation increased and in turn their students' achievement increased.

Kukla (1972) found that the kind of directions individuals were given affected their performance. Individuals with a high need for achievement performed better when instructions emphasized effort and ability attributions. When instructions emphasized ability attributions only, both high need for achievement and low need achievement individuals' performance deteriorated.

Bar-Tal (1978), after reviewing Deweck's research (1975) and Kukla's research (1972) on retraining peoples' beliefs about causes, hypothesized that achievement behavior would be maximized by providing instructions and feedback in terms of ability and effort attributions. Bar-Tal summarized four ways to alter attributions and to promote achievement: (a) provide tasks suitable to the person's abililty (i.e., set realistic goals), (b) provide directions prior to the tasks which emphasize the importance of effort for success, (c) allow the person to experience successful outcomes in order to raise confidence in his/her own ability and effort, and (d) provide feedback as to the importance of effort in achieving success and the importance of the person's beliefs in his/her own abilities.

Summary of Literature Related to Attribution

Individuals differed in how they explained success and failure (Weiner, 1972; Fitch, 1970; Bar-Tal, 1978; Nicholls, 1975; Friend & Neale, 1972).

Knowledge of individuals' beliefs about causes of success and failure appeared to be useful in understanding their behavior (Weiner, 1972). Attributions affected individuals' affective reactions to success and failure (Bar-Tal, 1978) as well as their performance (Weiner, 1972; Bar-Tal, 1978; Deweck & Repucci, 1973). Also individuals' attributions appeared to be modifiable (Weiner, 1980; Deweck, 1975; de Charms, 1972; Kukla, 1972). Thus attributions seemed to be another construct useful in collecting information on teachers' conceptual responses to educational events.

Summary of Cognitive Processing and Conceptual Schemata

Four constructs appeared to the investigator to be useful in collecting information on teachers' conceptual responses to educational events. These constructs served as organizers for the four dimensions of the PeeC Method:

1) Thought Unit - It was found that individuals selectively perceived information in their environment. The degree of differentiation that was made depended on the amount of experience, age, and intellectual abilities of the individuals. As individuals matured and had more experience with particular objects, people, and events, the number of elements which they perceived and/or recalled increased.

2) Source of Thought - It was found that teachers were concerned with three major subjects: self, significant others, and pupils. The degree to which the teachers were self-actualizing influenced the kinds of concerns they had as well as how much and what kind of information they extracted from their environment. As teachers matured professionally, the subject matter of their concerns tended to move from concerns with self to concerns about impact on pupils.

3) Type of Thought - It was found that individuals strove to make sense out of the diverse stimuli that they encountered. As individuals matured and had more experiences with particular objects, people, and events their abilities to reason about those tasks increased.

4) Attribution - It was found that individuals who attributed success to effort and failure to lack of effort attempted moderate difficulty level tasks, worked with greater intensity, persisted longer, and chose more activities than individuals who

attributed success to external causes and failure to lack of ability or external causes. The inferences individuals made about causes were modifiable.

Content Analysis

According to Kapland and Goldsen (cited in Berelson, 1954, p. 488), content analysis was "the quantitative classification of a given body of content in terms of a system of categories devised to yield data relevant to specific hypotheses concerning that content". Content analysis has been found to be useful "whenever a problem required a replicable method for analyzing elements of symbolic behavior which were overlooked under casual scrutiny" (Holsti, 1968, p. 602). The three major uses of content analysis have been to describe the characteristics of the content or form of the message, make inferences about the producer and/or audience of the message, and make inferences about the effects of the message (Holsti, 1968).

Content analysis was first used by students of journalism in the early 1900's to study the content, patterns, and trends in American newspaper (Berelson, 1954). Another early use for content analysis was the examination of various stylistic features in English poetry and prose (Berelson, 1954). During the late 1930's, content analysis was used to study public opinion, the radio (as a form of mass communication), and propaganda (Berelson, 1954). Government officials used content analysis during the Second World War to investigate the propaganda from various individuals, organizations, and countries (Berelson, 1954).

More recently psychologists and educators have used content analysis to gather clues about how a person feels and what a person thinks. For instance, Gottschalk and Gleser (1969) used content analysis to measure the verbal behavior of individuals as a key to understanding their psychological states. In the area of education, Withall (1949) used content analysis to measure the social-

emotional climate in classrooms. Amidon and Flanders (1967) used content analysis to develop the Verbal Interaction Category System (VICS) for analyzing the communication behaviors of teachers and pupils in the classroom. Hill (1978) developed a Counselor Verbal Category System similiar to the VICS. The counselor response system was developed to identify and measure counselors' verbal behaviors. And even more recently, Berkowitz and Gibbs (1982) have used content analysis to study the features of ethical discussions which promote moral development.

Planning for the Content Analysis Method

Holsti (1968, p. 644) outlined three major questions that must be answered before using the content analysis method: (a) "What content is to be classified?"; (b) "What sample is to be drawn?"; and (c) "What system of enumeration will be used?" The first question related to defining the content to be classified. Holsti divided this into the content unit and the recording unit. Holsti (1968) reported that the content unit was the largest body of content that must be searched to analyze verbal behavior. In choosing content units Holsti advised the selection of units that gave satisfactory results with the least expenditure of resources. In order to analyze the content units, recording units were necessary. Five major recording units have been used (Holsti, 1969) to analyze content units. These recording units were (a) the single word or symbol; (b) theme; (c) character; (d) paragraph, sentence, or other grammatical unit; or (e) item (e.g., entire article, film, book, or letter).

The second question concerned how to sample the content. Holsti (1968) identified three potential levels of sampling. These levels were the communication sources (the universe from which samples were drawn), the sampling documents, and sampling within documents.

The third question was how to enumerate the recording units. Four systems of enumeration have been used: (a) time/space, (b) appearance/non-appearance, (c) frequency, and (d) intensity (Holsti, 1968).

Design of a Content Analysis Study

In order to use data generated by the content analysis method to describe or make inferences, three questions should be addressed in the design of the study. These questions were: (a) "How is the research problem defined in terms of categories?"; (b) "Do the categories actually index the variables they are intended to measure?" and (c) "Are the results capable of verification within stated confidence limits?" (Holsti, 1968, p. 653).

The first question concerned how the research problem was defined in terms of categories. Berleson (1954) suggested that categories must be clearly formulated and well adapted to the problem of the study. Both Holsti (1968, p. 645) and Berelson (1954, p. 510) reported two major types of categories: "What is said" categories and the "How it is said" categories. When no standard classification forms existed for a particular problem, apropriate categories had to be constructed. Holsti (1968, p. 646) describes this as a process of "moving back and forth from theory to data, testing the usefulness of tentative categories, and modifying them in light of data". The criteria which Holsti gave for appropriate categories was that they must be representative of the elements in the investigator's theory, exhaustive, mutually exclusive, and replicable.

The second question concerned validity. Validity in content analysis has been determined in four ways (Holsti, 1968): (a) content validity (Are the results plausible?); (b) predictive validity (Do the data collected via the categories predict events for which evidence is not currently available?); (c) concurrent validity (Do the data collected via the categories predict to an outside

criterion?); and (d) construct validity (Do data from the categories successfully discriminate among groups known to differ in regard to relevant characteristics as predicted by theory?). Hill (1978) reported two ways to determine validity: face validity and content validity (Are the categories logically based upon theory? and Are the results plausible?).

The third question concerned reliability. Reliability in content analysis has been determined in two ways (Berelson, 1954). The first way was consistency or agreement across time (i.e., Does a rater achieve the same results when applying the same categories to the same content during two time periods?). The second way was consistency or agreement among raters (i.e., Do different raters achieve the same results when they apply the same categories to the same content?). Berelson indicated reliability was higher when the categories were simple, the coding rules were precise and complete, the illustrations were plentiful, and the raters were well-trained and experienced.

Summary of the Literature Review

Based upon the review of the literature the investigator identified four constructs upon which to establish dimensions so that student teachers' conceptual responses would be evident. The constructs that were chosen were named Thought Units, Source, Type of Thought, and Attribution. In addition a research procedure to provide a means for developing the categories for classifying the student teachers' conceptual responses was selected. The research procedure chosen was content analysis.

CHAPTER III

METHOD

The use of the content analysis method required the selection of the content to be analyzed; decisions about sampling; development of categories representing the investigator's theory; and establishment of reliability. This chapter will present the procedure utilized in collecting student teachers' written comments about their educational events and the decisions that were made related to sampling. Next the three phase procedure used in developing the categories within each PeeC dimension will be outlined.

Collection of Written Comments

The content that was used in the development of the PeeC dimension categories was the weekly written assignments of student teachers from a major state university. Sampling first involved the selection of a number of assignments per student teacher and then the utilization of only the lesson analysis portion of each assignment (see Appendix A: Examples of Lesson Plan and Lesson Analysis Forms). The above procedure for using a content analysis method was derived from Holsti (1968) and Berelson (1954).

Written Lesson Analyses

During the 1981 fall semester, and the 1982 spring semester, written comments were collected from student teachers from a major state university. The student teachers were elementary education majors. All but two of the student teachers (N=70) were female; and the average age of the student teachers was 21 years.

The student teachers planned, taught, and analyzed at least two lessons each week as part of the requirements for completing student teaching. Each lesson was taught in a public school classroom and was observed by one or more of the following: another student teacher, a cooperating teacher, and/or a university supervisor. After the lesson, this observer(s) provided feedback to the student teacher about the educational event before the student teacher wrote his/her analysis of the lesson. A lesson analysis form (see Figure 1 and Figure 2) was provided. It consisted of spaces for three kinds of information: (a) summary of feedback received, (b) the student teacher's reactions and thoughts about the lesson and feedback, and (c) future plans. The student teachers were instructed to respond to each of the stems. These instructions were purposely designed to be open so as to create a relatively "blank screen" on which the student teachers would project those elements of the educational event which were important to them (Gottschalk & Gleser, 1969).

Figure 1

Lesson Analysis Form - Fall, 1981

Summary of Feedback Received:

From Peer

From Cooperating Teacher and/or Supervisor

Your Reactions, Thoughts, Future Plans:

Figure 2

Lesson Analysis Form - Spring, 1982

Summary of Feedback from Peer/Cooperating Teacher/Supervisor (circle one):

Your Reactions and Thoughts:

Future Plans:

A total of 2370 written analyses were available for review. From the fall written lesson analyses (N=1080), one written lesson analysis per student teacher (N=36) was selected at random from the time period of the first three weeks of the semester and one was chosen at random from the last three weeks of the semester. This procedure yielded 72 written lesson analyses: 2 per student teacher x 36 student teachers. From the spring written lesson analyses (N=1290), one written lesson analysis for each student teacher (N=34) was selected at random from the first three weeks of the semester and one was chosen at random from the last three weeks of the semester. This procedure yielded 68 written lesson analyses: 2 per student teacher x 34 student teachers. Each written lesson analysis contained between 1 and 15 comments.

Lesson analyses from the early and late time periods were included so that if historical or maturational changes occurred during the semester of student teaching, the sampling of written comments would provide the most diversity of maturity levels and the most variety of content. The collection of lesson analyses from the early and late time periods was also important in order to construct a method that could eventually be used to collect pre- and post-data. The rationale for using the fall and spring periods was to further increase the diversity of the written comments by sampling a different group of student teachers so that the results from the reliability studies would be more generalizable.

In using the written comments from the lesson analyses, two assumptions were made. First, it was assumed that written comments of the student teachers were at least a minimal representation of their verbal comments and their non-verbalized thoughts. Second, it was assumed that the required format (forms and class requirements) did not operate to alter the usual conceptual

responses of the student teachers. No assumptions were made about the accuracy of student teachers' written com nents (i.e., whether or not what the student teachers said was true) since only the student teachers' conceptual responses were being investigated and because whether or not, the student teachers' perceptions were accurate, their behavior (or future behavior) was based upon their perceptions (Winne & Marx, 1979).

Preparation of the Written Analyses

The fall and spring lesson analyses were typed and edited in preparation for the development of the PeeC dimension categories. The addition of the editing step was the result of a preliminary study (Spring, 1982) of the PeeC dimension categories. In the preliminary study a small sample of student teachers' written comments was presented to twenty education professionals for classification. This group became so distracted by the writing abilities of the student teachers that their attention was diverted from examining evidence of student teachers' cognitive processing and conceptual schemata. Therefore, the fall and spring written lesson analyses were edited in six areas:

1. Misspellings were corrected. For example, the sentence, "I taught the concept cirsle," was corrected so "I taught the concept circle."

2. Capitalization was inserted on names and on beginnings of sentences. For example, the sentence, "i used a direction to get tom's attention," was rewritten as, "I used a direction to get Tom's attention."

3. Grammatical errors were corrected. For example, I were late today," was changed to, "I was late today." and "I used many divergent question," was changed to "I used many divergent questions."

4. Missing words were handled by adding the word thought to be missing and by placing parentheses around the added word. For example, "I was excited to see I used board," was changed to read "I was excited to see I used (the black) board." Missing nouns and/or pronouns such as subjects of sentences were not

added when this might cause a change in the attribution. For example, "Should watch Sue more closely," was not rewritten to say "(I) should watch Sue more closely."

5. Punctuation errors were corrected within and between sentences. For example, "I was concerned about reinforcing students_ ideas_ behaviors_ and feelings." was changed to read, "I was concerned about reinforcing students' ideas, behaviors, and feelings." The sentence, "I like this lesson_ it had lots of students participating," was changed to read, "I like this lesson; it has lots of students participating." This type of sentence was not divided into two sentences (i.e., not divided to read, "I like this lesson. It had lots of students participating.") since this would change the number of comments that were made and might change the number of Thought Units within a comment.

6. Terminology was handled by adding common terms in parentheses after any special terminology that was used. For example, "I was pleased with how I handled 6b's," was changed to read, "I was pleased with how I handled 6b's (negative reinforcement of behavior)."

In editing the written lesson analyses, the purpose was to correct only surface structure. If the investigator thought a correction might affect the student teacher's conceptual responses, no change was made.

During this preliminary study of the PeeC dimension categories, the investigator also noted that some comments in the student teachers' written lesson analyses were not related to the educational event. Therefore it became necessary to add to the four PeeC dimensions a means for determining whether or not the student teachers' written comments should be classified. The determination of whether or not student teachers' comments were about the educational event was named Comment Status.

Category Development Procedure

Content analysis served as the research tool for the development of the PeeC categories. Since there were no standard categories for classifying student teachers' conceptual responses, appropriate categories for each PeeC dimension had to be constructed. A process of moving back and forth from the literature

to examples of student teachers' written comments, testing the usefulness of tentative dimension categories, and modifying the categories in light of additional written comments was used (Berelson, 1954). This process was formalized into three phases: category development, initial interrater reliability, and follow-up interrater reliability.

Phase I: Category Development

The goal of Phase I was to construct dimensions and dimension categories for quantifying student teachers' written comments concerning educational events such that student teachers' conceptual responses would be evident. The categories within each PeeC dimension were constructed based upon a review of the literature as an initial step in establishing validity (Hill, 1978). To establish the reliability of each PeeC dimension, consistency across time (Berelson, 1954) was employed. The following procedures were used:

1. A literature review was completed to determine the dimensions and dimension categories for quantifying student teachers' conceptual responses to educational events.

2. Every comment in each lesson analysis (N=40) was identified and numbered (see Appendix B: Lesson Analyses from Student Teachers #30, #31, and 32).

3. Comments from the fall lesson analyses were classified by the investigator of the study according to the categories within each dimension. Examples of each category were preserved and category definitions were formed. Written comments that could not be classified were preserved.

4. The comments from the fall lesson analyses that could not be classified according the original categories within each dimension were isolated. These comments were analyzed by the investigator of the study. After a further

review of the literature, category definitions were rewritten, categories expanded, and/or new examples were added.

5. All the comments from the fall lesson analyses were classified by the investigator of the study using these revised categories, definitions, and examples.

6. After a period of three to six weeks, each comment from the fall lesson analyses were again classified by the investigator. Resulting classifications were compared to previous classifications in order to determine consistency across time. Consistency was calculated by the Percentage of Agreement method (Withall, 1949, p. 51):

$$\text{Percentage of Agreement} = \frac{\text{Number of agreements}}{\text{Number of agreements and disagreements}} \times 100$$

A criterion of 80% consistency was chosen based upon previous researchers usage of this criterion in content analysis studies. Inconsistencies in the classifications were analyzed and category definitions were rewritten based on a further review of the literature. This procedure was repeated until the investigator was able to classify comments within a PeeC dimension with at least 80% consistency across time.

Phase II: Initial Interrater Reliability

The goal of Phase II were to establish interrater reliability within each of the PeeC dimensions. To establish reliability of each PeeC dimension, agreement among raters (Berelson, 1954) was employed. The following procedures were used:

1. Three raters (university supervisors of student teachers) were trained in the PeeC Method of classifying written comments of student teachers:

a. An overview of four PeeC Method dimensions was presented to the raters.

b. A theoretical base for one dimension was presented to the raters.

c. Definitions and examples of each category within the dimension were presented to the raters.

d. The raters practiced classifying unselected comments.

e. Differences in raters' classifications were discussed, ambiguities were resolved, and category definitions were revised.

f. The raters classified a new set of comments.

g. Differences in raters' classifications were discussed, ambiguities were resolved, and category definitions were revised.

h. Steps b through g were repeated for each dimension of the PeeC Method.

2. Three or more fall written lesson analyses were randomly chosen such that thirty comments were available for classification. Each rater independently classified all thirty comments.

3. Interrater reliability on the categories within each of the PeeC dimensions was calculated. Agreement was determined by the Percentage of Agreement method (Withall, 1949).

4. Category definitions were revised and new sets of lesson analyses were provided until interrater reliability reached over 80%.

5. Once interrater reliability was reached on the four PeeC dimensions, student teachers' written comments were chosen on which the raters had a hundred percent agreement. These selected comments were compiled for use in Phase III.

Phase III: Follow-Up Interrater Reliability

The goal of Phase III was to establish interrater reliability within each of the PeeC dimensions (Berelson, 1954). This was implemented in two steps. First, the raters classified selected written comments from the fall lesson analyses. The following procedures were used:

1. Three raters (a cooperating teacher, a public school administrator, and an instructional consultant) were trained in the PeeC Method:

   a. An overview of four PeeC Method dimensions was presented to the raters.

   b. A theoretical base for one dimension was presented to the raters.

   c. Definitions and examples of each category within the dimension were presented to the raters.

   d. The raters matched selected examples to category definitions.

   e. Feedback on the correctness of their classifications was provided to raters.

   f. Steps b through e were repeated for each dimension of the PeeC Method.

2. Raters' accuracy of classification was determined by dividing the number of correct classifications (i.e., classifications which matched the investigator's and previous raters' classifications) by the total number of classified comments (Withall, 1949).

Second, the three raters classified unselected comments from this spring lesson analyses. The following procedures were used:

1. The raters were given randomly selected lesson analyses such that thirty comments were available for classification:

   a. The raters classified the comments.

b. Feedback was provided to raters, differences in classification were discussed, and category definitions were revised when necessary.

c. The raters classified a new set(s) of unselected comments.

d. Feedback was provided to raters, differences in classification were discussed, and category definitions were revised when necessary.

e. Steps a through d were repeated for each dimension of the PeeC Method.

2. Three or more spring written lesson analyses were randomly chosen such that thirty comments were available for classification. Each rater independently classified all thirty comments.

3. Interrater reliability of the categories within each of the PeeC dimensions was calculated. Agreement was determined by the Percentage of Agreement method (Withall, 1949).

4. Category definitions were revised and new sets of lesson analyses were provided until interrater reliability reached over 80%.

CHAPTER IV

RESULTS AND DISCUSSION

The development of the PeeC Method for classifying the written comments of student teachers such that evidence of their conceptual responses could be quantified will be presented. Each of the four PeeC dimensions will be discussed separately. First, the development of a PeeC dimension, category definitions, and category examples through Phase I, II, and III will be reported. Next, a description of that dimension, its categories, category definitions, and category examples will be presented. Third, the reliability of the dimension categories will be discussed. Fourth, recommendations for future research on the dimension will be given. The PeeC dimensions will be presented in the following order: (a) Thought Unit (e.g., One, Two, Three, etc.); (b) Source of Thought (e.g., Teacher/Pupil/Significant Other/Others); (c) Type of Thought (e.g., Descriptive/Explanatory); and (d) Attribution (e.g., Student Teacher Effort/No Student Teacher Effort). Following the presentation of the four PeeC dimensions, an area that was also developed, Comment Status (Classified/Unclassified), will be reported. Finally, instructions for using the PeeC Method along with a condensed version of the PeeC dimension and category definitions will conclude this chapter.

Thought Unit Dimension

The Thought Unit dimension of the PeeC Method was constructed in order to quantify how much of an educational event student teachers selectively perceived and/or recalled. The following sections will report the development of the Thought Unit categories, category definitions, and category examples through the three phases of this study.

Phase I: Category Development of the Thought Unit Dimension

During Phase I Thought Units were defined through a review of the literature as the number of variables in an educational event which appeared in student teachers' written comments. Written comments of student teachers about their educational events were enumerated by Thought Units. Category definitions were written and examples of each category were collected. Early in the development of the method for enumerating Thought Units, consistency across two time periods was 70% (see Table 1). Since these results were below the 80% criterion, continued category refinement was necessary.

In analyzing the enumeration of Thought Units across the two time periods, the investigator found that differences were due to enumerating phrases on an inconsistent basis. After the investigator decided to enumerate only clauses and not phrases, reliability improved but was still below 80%. The remaining inconsistency was judged to be related to whether or not to enumerate clauses such as "My supervisor said" and "The data revealed". The investigator decided to consider these Classified Comments (instead of Unclassified Comments) and to create a new category in the Source dimension called Significant Other category. After this modification was made, the method for enumerating Thought Units was again tested. Consistently across two time periods improved to 95%.

Table 1

Phase I: Reliability Across Two Time Periods

on the Thought Unit Dimension

Dates	Raters	Student Teachers' Comments	Reliability
6-30-82 to 2-20-83	1	All Fall Comments 1981	70.0%
2-20-83 to 3-14-83	1	All Fall Comments 1981	95.0%

Phase II: Initial Interrater Reliability on the Thought Unit Dimension

Interrater agreement on the Thought Unit dimension was tested by having three raters enumerate the Thought Units of Classified Comments from randomly chosen lesson analyses. The method of enumerating Thought Units appeared reliable since interrater agreement on the method for enumerating Thought Units was 80.6% (see Table 2). These results were slightly above the 80% criterion.

Because the Source dimension's accuracy was dependent on a reliable enumeration of Thought Units, an investigation was conducted to determine how to improve Thought Unit enumeration. Disagreements among raters were reduced by adding to the Thought Unit examples, the example "Feedback from my supervisor indicated that I used targeted positive reinforcement." After this modification was made, the method for enumerating Thought Units was tested using a different set of written comments. Interrater agreement improved to 90%.

Table 2

Phase II: Initial Interrater Reliability

on the Thought Unit Dimension

Dates	Raters	Student Teachers' Comments	Reliability
4-21-83	3	30 Fall Comments	80.6%
4-29-83	3	30 Fall Comments	90.0%

Phase III: Follow-Up Reliability on the Thought Unit Dimension

First, the reliability of the Thought Unit dimension was tested by having the raters (a cooperating teacher, a public school administrator, and an instructional consultant) enumerate the Thought Units of selected examples of written comments. Results of this test indicated a 97% accuracy of classification with the investigator and previous raters.

Next, reliability on unselected written comments was investigated. Interrater agreement on the method for enumerating Thought Units was 80.6% (see Table 3). These results were just above the 80% criterion. Because the accuracy of the Source dimension was dependent on the correct identification of the Thought Units, an investigation was conducted to determine how to improve the Thought Unit dimension. Lack of agreement among raters was noted in two areas. First, raters were confused as to the difference between a clause and a phrase. This was reduced by adding to the description of a clause the sentence: "Phrases lack a subject and a finite verb." The second inconsistency had to do with whether or not to enumerate sentence fragments. This was reduced by adding to the Thought dimension the note: "When a Classified Comment is a

sentence fragment, it is classified as a Thought Unit," and by adding the examples: "Too much small group activity during Math." and "Consequences!!". After these modifications were made, the method for enumerating Thought Units was tested using a different set of written comments. Interrater agreement improved to 86.5%.

Table 3

Phase III: Follow-Up Interrater Reliability

on the Thought Unit Dimension

Dates	Raters	Student Teachers' Comments	Reliability
5-9-83	3	Enumerating Selected Examples	97.0% accuracy
5-9-83	3	30 Spring Comments	80.6% agreement
5-16-83	3	30 Spring Comments	86.5% agreement

Description: Thought Unit Dimension

Thought Units were defined as the separate elements of the educational event which appeared in clause, sentence, or sentence fragment form within the Classified Comments of a student teacher. Thought Units were found to occur separately, in a series, or linked in a relationship (see Appendix C: PeeC Dimension and Category Definitions).

The number of Thought Units was obtained by enumerating the number of clauses within one Classified Comment. A clause is a group of words that has a subject and a finite verb. (Phases lack a subject and a finite verb.) Clauses may

be independent: "The girls tossed the ball." or dependent: "when the girls tossed the ball". Dependent clauses may be adjective clauses: "The student who threw the eraser was new"; adverb clauses: "When the students finished, I gave new directions"; or noun clauses: "That I was angry was easy for the student to see" and "Tom said he would not sit down." Examples of Thought Units to be enumerated included the following:

The students were great today. (One Thought Unit)
There were ten opportunities to reinforce in my lesson. (One Thought Unit)
During the second half of the lesson, the students were on task. (One Thought Unit)
I should read slower when reading aloud. (One Thought Unit)
I used Control questions to keep the class in order. (One Thought Unit)
It is hard to use reinforcement during a drill. (One Thought Unit)
When I positively reinforce Sarah's ideas, she starts talking more. (Two Thought Units)
The cooperating teacher said, "You need to write clearly." (Two Thought Units)
Janie worked quietly at her desk and John worked at the Interest Center. (Two Thought Units)
Feedback from my supervisor indicated that I used targeted positive reinforcement. (Two Thought Units)
Todd attended when he got to answer a question and when he helped the teacher. (Three Thought Units)

Thought Units were either general or specific. There was no difference in how specific and general Thought Units were enumerated. Examples included the following:

The lesson went well and I was satisfied. (Two general Thought Units)
Twenty-five out of twenty-seven students learned to spell the days of the week. (One specific Thought Unit)
I used lots of reinforcement today. (One general Thought Unit)
I postively reinforced Alex's behavior four times and gave corrective feedback to him twice. (Two specific Thought Units)

Special Circumstances. Five special circumstances were identified when enumerating Thought Units. First, when Classified Comment had compound or multiple subjects, it was enumerated as two (or more) Thought Units. Examples included the following:

> Positive reinforcement and time-out were used to manage the students. (Two Thought Units)
> Alice, Josy, and Marilyn were having difficulty with their handwritting. (Three Thought Units)

Second, when a Classified Comment had compound or multiple verbs, it was enumerated as two (or more) Thought Units. Examples included the following:

> The students ran on the way to lunch and talked on the way to the bathroom. (Two Thought Units)
> I made a Class rule, explained it to the students, and disciplined based on the rule. (Three Thought Units)

Third, when a classified Comment had compound or multiple direct objects, it was enumerated as two (or more) Thought Units. Examples included the following:

> I asked more divergent questions than convergent ones. (Two Thought Units)
> The children were able to sort the glass and the metal, but not the plastic. (Three Thought Units)
> We needed a filmstrip on the Metric System and one on Fractions. (Two Thought Units)
> The data was: 3 Voluntary, 5 Control, and 1 Mass question. (Three Thought Units)

Fourth, when a Classified Comment had both double (or multiple) subjects and double (or multiple) predicates, it was enumerated as four (or more) Thought Units. An example included the following:

> Van and Amber stacked the blocks and then knocked them down. (Four Thought Units)

And fifth, when a Classified Comment was a sentence fragment, it was enumerated as one Thought Unit. Examples included the following:

> Too much small group activity during math. (One Thought Unit)
> Consequences!! (One Thought Unit)

Discussion: Thought Unit Dimension

An analysis of the data collected on the Thought Unit dimension suggested that the theoretically based method for enumerating Thought Units was reliable. First, a method for enumerating Thought Units was conceptualized based on a review of the literature. Second, category definitions were constructed and sufficient examples were collected of the Thought Unit dimension such that consistency across two time periods was 95%. Third, the method for enumerating Thought Units was reliable as evidenced by the raters' ability to enumerate selected examples with 97% accuracy of classification with the investigator and previous raters. Fourth, the method for enumerating Thought Units was reliable such that two different groups of raters using different sets of lesson analyses (Fall, 1981 and Spring, 1982) achieved an average 88.3% level of interrater agreement by the end of Phase II and Phase III.

Recommendations for Future Research on the Thought Unit Dimension

In the Thought Unit dimension, one direction in which further research could be considered was noted. At this point in the development of the PeeC Method only information that is reported in clause form is enumerated. A method for enumerating additional information might be developed. Such a definition might read: Additional information is an aspect of the educational event which appears within a Thought Unit and makes the Thought Unit more specific. Additional Information Units may occur in the form of phrases, noun modifiers, appositives, and adverbs. Examples of Additional Information Units might be:

> During the second half of the lesson, the students were noisy. (One Thought Unit + One Additional Information Unit)

I noticed the boy on the back row who was yawning. (Two Thought Units + One Additional Information Unit)
Tom was sitting in the corner. (One Thought Unit + One Additional Information Unit)
The movie on Ecology was excellent. (One Thought Unit + One Additional Information Unit.
Sam wanted to answer before Larry. (One Thought Unit + One Additional Information Unit)
The large room was crowded. (One Thought Unit + One Additional Information Unit)
Mathew's ideas were ignored. (One Thought Unit + One Additional Information Unit)
Four out of twenty students learned the Science concept. (One Thought Unit + Two Additional Information Units)
Matt, the youngest student in the class, knew the answer. (One Thought Unit + One Additional Information Unit)
I quickly changed my tactics when silence followed my directions. (Two Thought Units + One Additional Information Unit)
After lunch the students went wild; this morning they worked hard. (Two Thoughts Units + Two Additional Information Units)

Further development and research in this direction might supply a means for identifying peripheral information that a student teacher notices. The peripheral information that a student teacher has perceived and recalled about an educational event might provide insight as to the student teacher's readiness to develop new concepts or tie isolated information into meaningful and useful relationships.

Source Dimension

The Source dimension of the PeeC Method was constructed to quantify the kinds of elements in an educational event which student teachers selectively perceived and/or recalled. The following sections will report the development of the Source categories, category definitions and category examples through the three phases of this study.

Phase I: Category Development of the Source Dimension

During Phase I Source was defined as the classification of student teachers' Thought Units by subject matter. Written comments of student teachers about their educational events were grouped by Source categories: Teachers, Pupil, and Other. Category definitions were written and examples of each category were collected. Early in the development of the categories in the Source dimension, consistency across two time periods was 68% (see Table 4). Since these results were below the 80% criterion, continued category development was necessary.

In analyzing the classifications across the two time periods the investigator found that the inconsistencies were due to differences in classifying comments by a significant other. After reviewing the literature, the definition of Classified Status was changed to include comments about the educational event by a significant other. Also, a Significant Other category was added to the Source dimension. After these modifications were made, the categories of the Source dimension were again tested. Consistency across two time periods improved to 94%.

Table 4

Phase I: Reliability Across Two Time Periods

on the Source Dimension

Dates	Raters	Student Teachers' Comments	Reliability
6-30-82 to 2-20-83	1	All Fall Comments 1981	68.0%
2-20-83 to 3-14-83	1	All Fall Comments 1981	94.0%

Phase II: Initial Interrater Reliability on the Source Dimension

Interrater agreement on the Source dimension was tested by having three raters identify and classify by Source categories the Thought Units within Classified Comments from randomly chosen lesson analyses. An analysis of raters' classifications of Thought Units by Source categories indicated that the Source categories were exhaustive since raters could classify all the written comments that they were given within categories of the Source dimension. The Source categories were not reliable since interrater agreement on categories of the Source dimension was 72% (see Table 5).

Lack of agreement in raters' classification of Thought Units by categories of the Source dimension were identified in five areas. First, the Source category definitions did not indicate how raters should classify single Thought Units such as "Feedback from my cooperating teacher showed only negative reinforcement being used." and "The data revealed a limited movement pattern on the part of the teacher." These examples were added to the examples already part of the Significant Other category of the Source dimension.

The second disagreement among raters concerned whether implied teachers' behaviors were classified as Teacher Source category or Other Source category. This was resolved by adding a note to the Teacher Source category "When the teachers' behavior is implied, classify the subject of the Thought Unit as Teacher Source" and adding the example "The directions were not clear."

The third disagreement among raters involved which category of the Source dimension comments about teachers other than the student teacher should be classified. This was resolved by adding to the definition of the Teacher Source category the words "The student teacher or another teacher who

participates or takes part in the educational event" and by adding the example "Mrs. Smith told Ralph to sit down."

The fourth disagreement involved raters' understanding of the Significant Other category. The definition of the Significant Other category was refined by adding the words "observer, peer, or adult other than the student teacher who makes a comment about the educational event".

The fifth disagreement among raters involved the classification of subjects which are indefinite pronouns (e.g., this, that, these, it). This inconsistency was addressed by adding a general note to the Source dimension. The note indicated that Thought Units should be classified according to whom or what the pronoun's antecedent referred. Examples with indefinite pronouns were also added to each category in the Source dimension. After these five modifications were made, Source categories were tested using a different set of written comments. Interrater agreement improved to 95%.

Table 5

Phase II: Initial Interrater Reliability

on the Source Dimension

Dates	Raters	Student Teachers' Comments	Reliability
4-21-83	3	30 Fall Comments	72.0%
4-29-83	3	30 Fall Comments	95.0%

Phase III: Follow-Up Reliability on the Source Dimension

First, the reliability of the Source dimension was tested by having the raters (a cooperating teacher, a public school administrator, and an instructional

consultant) classify selected examples of written comments by Source categories. Results of this test indicated 89% accuracy of classification with the investigator and previous raters.

Next, reliability on unselected written comments was investigated. Interrater agreement on categories of the Source dimension was found to be 86% (see Table 6). These results were above the 80% criterion. Lack of agreement in raters' classifications were identified in two areas. First, the Source dimension was initially called the Target dimension. Raters reported that the name Target made them want to classify the direct or indirect objects of the sentences according to their topic(s) instead of the subject of the sentences. Raters suggested the term Source be used since the subject was usually thought of as the source of action. This change was made.

The second area of disagreement among raters related to teacher behavior which was implied. The disagreement was reduced by changing the examples in the Teacher Source category (under the note on teacher behavior which is implied) to read "My directions were not clear. (I gave unclear directions.)". After these two modifications were made, Source categories were tested using a different set of written comments. Agreement among raters decreased slightly; the interrater agreement was 83.3%.

Table 6

Phase III: Follow-Up Interrater Reliability

on the Source Dimension

Dates	Raters	Students' Teacher Comments	Reliability
5-9-83	3	Matching Category Definitions to Selected Examples	89.0% accuracy
5-9-83	3	30 Spring Comments	86.0% agreement
5-16-83	3	30 Spring Comments	83.3% agreement

Description: Source Dimension

Source was defined as the classification of the subject of each Thought Unit within a Classified Comment by topic. Categories in the Source dimension were teacher, pupil, significant other, and other (see Appendix C: PeeC Dimension and Category Definitions).

Teacher Source Category. A Thought Unit classifed as Teacher Source was one in which the subject of the Thought Unit was a teacher (the student teacher or another teacher) who was responsible for or who participated in the educational event. Examples of Teacher Source included the following:

I did a terrible job today.
Mrs. Smith told Ralph to sit down.
I waited ten seconds on Maria.
Need to try something new with this group.
I used negative reinforcement on two students.

Pupil Source Category. A Thought Unit classified as Pupil Source was one in which the subject of the Thought Unit was the pupil(s). Examples of Pupil Source included the following:

Jose's guess was "48".
Henry wrote a creative story.
The Turtle group finally learned to count.
Kelly ran down the hall.
The class was good all day.
Jo Ann cried all afternoon.
The students seemed bored with the activity.

Significant Other Source Category. A Thought Unit classified as Significant Other Source was one in which the subject of the Thought Unit was an observer or adult other than the student teacher, who made a comment about the educational event. Examples of Significant Other Source included the following:

Mrs. Smith reminded me to involve as many students as possible.
My supervisor noted the lack of manipulatives for each child.
Amy heard only recall questions being asked during the Science lesson.
Feedback from my cooperating teacher showed only negative reinforcement being used.
The data revealed a limited movement pattern on the part of the teacher.

Other Source Category. A Thought Unit classified as Other Source was one in which the subject matter of the Thought Unit was something other than the teacher, pupil, or significant other. Some subjects that were Other Source included time, materials, classroom environment, content of the lesson, and teaching method. Examples of Other Source included the following:

A tape on the metric systems is needed.
The room felt cold today.
My activity lasted for only twenty minutes.
The Concept Attainment method was used.
Noun was the concept.
A high noise level bothers me.
The lesson was not planned by me.
The students' papers were left on their desks.

Special Circumstances. Two special circumstances were identified relating to Teacher Source. First, when teacher behavior was implied, the subject of the Thought Unit was classified as Teacher Source. Some teacher behaviors that were implied included cuing participation, questioning, wait time, reinforcement, action zone, and direction giving. Examples included the following:

My directions were not clear. (I gave unclear directions.)
Thirty divergent questions were asked. (The teacher asked 30 divergent questions.)
The management of the class was better than yesterday. (I managed the class better than yesterday.)

Second, when the subject of a Thought Unit was a plural, involving the teacher and someone else, the Source was classified as Teacher. Examples included the following:

We needed to have more time for the activity.
All of us enjoyed the lesson.

Two other general circumstances were identified. First, when more than one Thought Unit was identified in a Classified Comment, the subject of each Thought Unit was classified: Pupil/Pupil, Teacher/Teacher, Teacher/Pupil, Other/Teacher, Pupil/Other/Teacher, Significant/Other/Pupil, etc. Examples included the following:

The students demonstrated their measurement device and then correctly measured their objects. (Pupil/-Pupil)
My questions seemed to be at the higher cognitive levels, but my wait time was short. (Teacher/Teacher)
We waited until the whole class was attending. (Teacher/Pupil)
After I named the properties of the objects, the students sorted them. (Teacher/Pupil)
When the temperature in the room rose, I became frustrated. (Other/Teacher)
Kelly and Mathew picked up the trash. (Pupil/Pupil)
I positively reinforced students' good behavior and corrected their wrong answers as each student responded. (Teacher/Teacher/Pupil)
I used Solitary, Controlled, and Voluntary Questions in my lesson. (Teacher/Teacher/Teacher)
My cooperating teacher noted that students were talking alot today. (Significant Other/Pupil)
Cathy was concerned about how I distributed my questions only to the students in the front row. (Significant Other/Teacher)
Lis recorded that thirty questions were asked. (Significant Other/Teacher)
The principal suggested that I must be consistent in my discipline. (Significant Other/Teacher)

> My supervisor's data revealed a high percentage of positive reinforcement of students' ideas and a high level of negative reinforcement for behavior. (Significant Other/Other)

Second, when the subject of a Thought Unit was an indefinite pronoun (e.g., this, that) that referred to a previous comment or Thought Unit, the Source of the Thought Unit was classified according to what the pronoun's antecedent referred. The following is an example:

> I was pleased with the lesson. (Teacher) That was because the students participated. (Teacher)

Discussion: Source Dimension

An analysis of the data collected the Source dimension suggested that the theoretically based Source categories were reliable, exhaustive, and mutually exclusive. First, categories of the Source dimension were conceptualized based on a review of the literature. Second, definitions were constructed and sufficient category examples were collected for the Source dimension such that consistency across two time periods was 94%. Third, the Source categories were reliable as evidenced by raters' ability to classify to selected examples with 89% accuracy of classification with the investigator and previous raters. Fourth, the Source categories were exhaustive as evidenced by the raters' ability to classify all written comments of student teachers. And fifth, the Source categories were reliable such that two different groups of raters using different sets of lesson analyses (Fall, 1981 and Spring, 1982) achieved an average 89.0% level of interrater agreement by the end of Phase II and Phase III. Based upon this data the Source categories were judged to be mutually exclusive.

Recommendations for Future Research on the Source Dimension

In the Source dimension, one direction in which further research could be considered was noted. At this point in the development of the PeeC Method,

subject matter within a Source category was grouped together. Perhaps, a method for differentiating subject matter would be useful. The Teacher category of the Source dimension might include sub-categories for such behaviors as questioning, reinforcement, direction-giving, action zone, and time on task as well as for thoughts and feelings. The Pupil category of the Source dimension might include sub-categories such as on/off task behavior, asking questions, giving responses, level of achievement, and expressing feelings. The Significant Other category of the Source dimension might include sub-categories such as reported data, shared judgments, and gave emotional support. The Other category of Source dimension might include sub-categories such as time, lesson objective, teaching method, materials, and arrangement of the room. Further development and research in this direction would enable supervisors to identify within a particular Source category what information student teachers are perceiving.

Type of Thought Dimension

The Type of Thought dimension of the PeeC Method was constructed to quantify how information was processed. The following sections will report the development of the Type of Thought categories, category definitions, and category examples through the three phases of this study.

Phase I: Category Development of the Type of Thought Dimension

During Phase I Type of Thought was defined through a review of the literature as whether or not student teachers reported a relationship in each of their written comments about the educational event. Written comments of student teachers about their educational events were grouped by the Type of Thought categories: Descriptive and Explanatory. Category definitions were

written and examples of each category were collected. Early in the development of the categories of the Type of Thought dimension, consistency across two time periods was 95% (see Table 7).

Table 7

Phase I: Reliability Across Two Time Periods on the Type of Thought Dimension

Dates	Raters	Student Teachers' Comments	Reliability
6-30-82 to 2-20-83	1	All Fall Comments 1981	94.0%
2-20-83 to 3-14-83	1	All Fall Comments 1981	95.0%

Phase II: Initial Interrater Reliability on the Type of Thought Dimension

Interrater agreement of the Type of Thought dimension was tested by having raters classify by Type of Thought categories Classified Comments from randomly chosen lesson analyses. An analysis of raters' classifications of Classified Comments by Type of Thought categories indicated that the Type of Thought categories were exhaustive since raters could classify all the written comments they were given in terms of the Type of Thought dimension. The Type of Thought categories did not appear precise since interrater agreement on the categories of the Thought Unit dimension was 63% (see Table 8).

Interviews with the raters revealed a lack of clarity in the definition of the Explanatory Thought category. The definition of the Explanatory Thought category was modified by adding the words: "cause and effect relationship or

explain aspects of the educational event". In addition the example "The filmstrip was a poor introduction because it over excited the students." was added to the Explanatory Thought category. After these modifications were made, the categories of the Type of Thought dimension were tested using a different set of written comments. Interrater agreement improved to 81%.

Table 8

Phase II: Initial Interrater Reliability

on the Type of Thought Dimension

Dates	Raters	Student Teachers' Comments	Reliability
4-21-83	3	30 Fall Comments	63.0%
4-29-83	3	30 Fall Comments	81.0%

Phase III: Follow-Up Reliability on the Type of Thought Dimension

First, the reliability of the Type of Thought dimension was tested by having raters (a cooperating teacher, a public school administrator, and an instructional consultant) classify selected examples of written comments by Type of Thought categories. Results of this test indicated 84% accuracy of classification with the investigator and previous raters.

Next, reliability on unselected written comments was investigated. Interrater agreement on categories of the Type of Thought dimension was found to be 50% (see Table 9). Since these results were below the 80% criterion, continued category development was necessary. Lack of agreement in raters' classifications were noted in three areas. First, when a relationship was reported but not

found or not thought to be true, it was to be classified as an Explanatory Thought. Raters reported either overlooking these relationships or deciding the relationships reflected poor reasoning on part of the student teacher; thus the raters classified the comments as Descriptive Thoughts. This problem was resolved by adding to the definition of Explanatory Thought category the words "whether or not these lack of relationships are accurate they are classified as Explanatory Thoughts". Also, three examples were added to the existing examples of the Explanatory Thought category to bring to raters' attention to this particular kind of Explanatory Thought.

Second, there was a lack of agreement among raters on how to classify Explanatory Thoughts stated in the future tense. An analysis of raters' disagreements revealed that all the examples that raters had been shown were in the past or present tense. This difficulty was addressed was reduced by adding examples of Explanatory Thoughts stated in the future tense. Examples that were added were included "Next time I want to use something to get the students more involved," and "I will enlarge my traffic pattern to include some students who do not usually participate."

Third, there was a lack of agreement among raters on how to classify Thought Units connected with a dash, such as "I will use the same lesson plans next time—the lesson went well." The note under Descriptive Thoughts was amended to read "When a conjunction, dash, or semicolon connects two (or more) Thought Units within a sentence, but no relationship is explored, the comment is classified as a Descriptive Thought." After these modifications were made, Type of Thought categories were tested using a different set of written comments. Interrater agreement improved to 83.3%

Table 9

Phase III: Follow-Up Interrater Reliability

on the Type of Thought Dimension

Dates	Raters	Student Teachers' Comments	Reliability
5-16-83	3	Matching Category Definitions to Selected Examples	84.0% accuracy
5-16-83	3	30 Spring Comments	50.0% agreement
5-27-83	3	30 Spring Comments	83.3% agreement

Description: Type of Thought Dimension

Type of Thought was defined as the classification of each Classified Comment by whether or not a relationship/explanation was explored within or between Thought Units. The categories within the Types of Thought dimension were descriptive and explanatory (see Appendix C: PeeC Dimension and Category Definitions).

Descriptive Thought Category. Descriptive Thoughts were thoughts which reported or described the educational event but did not explore a relationship within the educational event. Examples of Descriptive Thoughts included the following:

The students raised their hands.
I would like to use more Spontaneous questions.
The film on fractions was too short and very complex.
Both Kelly and Time should be in another reading group.
I stood by the blackboard and presented the lesson.
I noticed the boy on the back row was talking and I saw that Sarah was out of her seat twice during the lesson.

Explanatory Thought Category. Explanatory Thoughts were thoughts which explored a relationship (usually, but not limited, to a cause and effect relationship) in the educational event. The relationship was usually found between the Two Thought Units, but occasionally occurred within one Thought Unit. Relationships were stated in past, present, or future tense. Examples of Explanatory Thoughts included the following:

> Since I gave lots of positive reinforcement, I didn't have to give as many negative reinforcements.
> The students will be able to follow along in their own book because I will read slowly.
> When Sarah comes to school all dressed up, she acts better.
> Patti observed that the students who took longer to finish their work did better than the ones who rushed through it.
> It would like to use a longer wait so that the students have plenty of time to create new ideas.
> From the data I realized that the children who participated most during the warm-up activity got the best grades on the worksheet.
> Next time, I want to use something to get the students more involved.
> If I ignore Heather's crying, it gets worse.
> Given a new topic, I would like to use more Spontaneous questions, since it will give the students time to think.

Special Circumstances. Two special circumstances were identified which related to the Descriptive Thought category. First, when a coordinating conjuntion (e.g., and, but, or, nor), a dash, or a semicolon connected two (or more) Thought Units within a sentence but no relationship was explored, the comment was classified as a Descriptive Thought. Examples included the following:

> The puppet was something new and the students were excited.
> Either the lesson was too difficult or my students were not trying today.
> I will use the same lesson plans next time—the lesson went well.
> Zoe was working quietly at his desk, but Sam was playing in the corner.

One time she reinforced a wrong answer; another time she criticized a correct answer.

Second, when conditions or circumstances under which the event occurred were reported but no relationship was explored (e.g., no consequences were reported), the comment was classified as a Descriptive Thought. Examples included the following:

During the Spelling Test, Controlled questions were used.
In the future, I would like to ease into more Voluntary and Spontaneous questions.

Five special circumstances were identified which related to Explanatory Thoughts. First, many times the relationship that was explored was an explanation of aspects of the educational event. Examples included the following:

The filmstrip was a poor introduction because it over excited the students.
I felt good because I used ignoring in the correct way.
I had good control most of the time which was what I wanted with the Voluntary question type.
I will enlarge my traffic patter to include some students who do not usually participate.
I called on a variety of students when they volunteered by raising their hands.
I felt good because I used ignoring in the correct way.

Second, often a relationship or explanation was reported/proposed via one Thought Unit. Examples included the following:

The seating arrangement affected the distribution of teacher comments.
Reinforcement will encourage the students to make more comments.
I used Solitary questions to keep the class in order.
Most of the students will be involved due to the board-work.
My mood affects the students' mood.
In this low class, a positive teacher attitude increases student motivation.
The new puppet excited the students.

Third, occasionally the relationship that was explored was not thought or not found to be true. Whether or not the "lack of relationship" is accurate, the comment is still identified as an Explanatory Thought. Examples included the following:

> Although I gave clear directions, the students could not complete the art project.
> The students, who finished first, did not do the best work.

Fourth, often the relationship of an Explanatory Thought was embedded within the comment. Examples included the following:

> I ask more questions of low achievers than I do of high achievers.
> I tested all the students who had not turned in their homework.

Fifth, the relationship in an Explanatory Thought occasionally was found to depend on Thought Units that existed in a preceding comment. Examples included the following:

> Only half the class knows the answer. (Descriptive Thought) Maybe the teacher needs to bring the lesson down to the students' level of thinking by using concrete examples. (Explanatory Thought)
> My Cooperating Teacher asked me where I stood. (Descriptive Thought) This made me realize that I had not asked the students on my right any questions. (Explanatory Thought)
> I gave individual instructions to those who did not understand. (Explanatory Thought) This kept the other students from being bored with extra instruction. (Explanatory Thought)

Discussion: Type of Thought Dimension

An analysis of the data collected on the Type of Thought dimension suggested that the theoretically based Type of Thought categories were reliable, exhaustive, and mutually exclusive. First, categories of the Type of Thought dimension were conceptualized based on a review of the literature.

Second, definitions were constructed and sufficient category examples were collected for the Type of Thought dimension such that consistency across two time periods was 95%. Third, the Type of Thought categories were reliable as evidenced by raters' ability to classify selected examples with 84% accuracy of classification with the investigator and previous raters. Fourth, the Type of Thought categories were exhaustive as evidenced by raters' ability to classify all written comments of student teachers. And fifth, the Type of Thought categories were reliable such that two different groups of raters using different sets of lesson analyses (Fall, 1981 and Spring, 1982) achieved an average 82.0% level of interrater agreement by the end of Phase II and Phase III. Based upon this data, the Type of Thought categories were judged to be mutually exclusive.

Recommendations for Future Research on the Type of Thought Dimension

In the Type of Thought dimension, one direction in which further research could be considered was noted. At this point in the development of the PeeC Method, the accuracy of comments classified as Descriptive and Explanatory Thoughts were not addressed. Perhaps, a method for rating the accuracy of a Classified Comment would be useful. This would allow for a differentiation between Descriptive and Explanatory Thoughts that were accurate and those that were inaccurate. This refinement would require a qualified professional to collect data against which a student teacher's perceptions could be verified. Information on the accuracy of a student teacher's perceptions could then be used in follow-up supervision conferences to validate or correct the student teacher's information base.

Attribution Dimension

The Attribution dimension of the PeeC Method was constructed to quantify student teachers' schemata about causality in educational events. The following sections will report the development of the Attribution categories, category definitions, and category examples through the three phases of this study.

Phase I: Category Development of the Attribution Dimension

During Phase I Attributions of student teachers were defined through a review of the literature as whether or not student teachers were designated as causing occurrences in the educational event. Written comments of student teachers about their educational events were grouped by Attribution categories: Teacher Attribution, Factors Other Than Teacher Attribution, and No Attribution. Category definitions were written and examples of each category were collected. Early in the development of the categories of the Attribution dimension, consistency across two time periods was 81% (see Table 10).

An analysis of the investigator's classifications across two time periods revealed two areas of inconsistency. The first inconsistency occurred in the investigator's classification of comments in which Attribution was implied or could be inferred. The second inconsistency occurred in the investigator's classification of comments whose Source was the teacher, but the teacher's behavior was implied. While the investigator did not rewrite the category definitions, the categories of the Attribution dimension were again tested. Consistency of the Attribution categories across two time periods improved to 91%.

Table 10

Phase I: Reliability Across Two Time Periods on the Attribution Dimension

Dates	Raters	Student Teachers' Comments	Validity and Reliability
6-30-82 to 2-20-83	1	All Fall Comments 1981	81.0%
2-20-83 to 3-14-83	1	All Fall Comments 1981	91.0%

Phase II: Initial Interrater Reliability on the Attribution Dimension

Interrater agreement of the Attribution dimension was tested by having three raters classify by Attribution categories written comments from randomly chosen lesson analyses. An analysis of raters' classifications of Classified Comments by Attribution categories indicated that the Attribution categories were exhaustive since raters could classify all the written comments they were given by categories of the Attribution dimension. The Attribution categories did not appear precise since interrater agreement on the categories of the Attribution dimension was 53% (see Table 11).

Several areas of disagreement in raters' classifications were identified. First, there was confusion of Attribution categories with the Type of Thought dimension. Raters attempted to put any Explanatory Thought into the Teacher Attribution category or Other Causal Factors category and any Descriptive Thought into the No Attribution category. This problem was resolved by renaming Teacher Attribution as Teacher Causality and creating by another category named Teacher Responsibility from the special circumstance note, "Occasionally a designation of teacher responsibility is made, but the events in

the educational event which it caused are not stated." While this new category, Teacher Responsibility, was equal to Teacher Causality in terms of the Attribution dimension, it appeared to help raters achieve conceptual consistency.

Second, raters confused Attribution categories with the Source categories. Raters attemped to put any comment with Teacher Source in the Teacher Causality or Teacher Responsibility categories. This discrepancy was resolved by renaming the categories: Student Teacher Causality (Self Causality) and Student Teacher Responsibility (Self Responsibility).

A third disagreement among raters related to Thought Units which were Teacher Source but where teacher behavior was implied. This was resolved by adding notes under the Other Casual Factors category and under the No Attribution category. The notes read, "When a comment designates student teacher behaviors as causing events in the educational event to occur but the teacher behavior is implied, it is classified as Other Casual Factors since the student teacher has not assumed the responsibility." and "When a comment reports teacher behavior and the teacher behavior is implied, the behavior is not assumed to be the student teacher's own behavior and therefore is classified as No Attribution."

Fourth, the No Attribution category definition appeared unclear to the raters. It was changed to read "No Student Teacher Causality nor Other Factors Causality as well as no Student Teacher Responsibility is designated." After these modifications were made, the Attribution categories were tested using a different set of written comments. Interrater agreement improved to 89%.

Table 11

Phase II: Initial Interrater Reliability

on the Attribution Dimension

Dates	Raters	Student Teachers' Comments	Reliability
4-21-83	3	30 Fall Comments	53.0%
4-29-83	3	30 Fall Comments	89.0%

Phase III: Follow-Up Reliability on Attribution Dimension

First, the reliability of the Attribution dimension was tested by having raters (a cooperating teacher, a public school administrator, and an instructional consultant) classify selected examples of written comments by Attribution categories. Results of this test indicated 88.6% accuracy of classification with the investigator and previous raters.

Next, reliability on unselected written comments was investigated. Interrater agreement on the categories of the Attribution dimension was found to be 90% (see Table 12). While reliablility was at a satisfactory level, raters expressed confusion with the four categories in the Attribution dimension: Student Teacher Casuality, Student Teacher Responsibility, Other Casual Factors, and No Attribution. After a series of discussions, it became clear to the investigator that there were only two categories in the Attribution dimension: Student Teacher Effort and No Student Teacher Effort. Thus Student Teacher Causality and Student Teacher Responsibility became sub-categories under the category Student Teacher Effort. Other Casual Factors and No Attribution became sub-categories under No Student Teacher Effort category.

Both sets of sub-categories differed on the Type of Thought dimension but were the same in terms of the Attribution dimension. After these modifications were made, Attribution categories were tested using a different set of written comments. Interrater agreement was 90%.

Table 12

Phase III: Follow-Up Interrater Reliability

on the Attribution Dimension

Dates	Raters	Student Teachers' Comments	Reliability
5-16-83	3	Matching Category Definitions to Selected Examples	88.6% accuracy
5-16-83	3	30 Spring Comments	90.0% agreement
5-27-83	3	30 Spring Comments	90.0% agreement

Description: Attribution Dimension

Attribution was defined as the determination of whether or not the student teacher accepted responsibility for (or was designed as responsible for) the educational event. Categories of the Attribution dimension were Student Teacher Effort and No Student Teacher Effort (see Appendix C: PeeC Dimension and Category Definitions).

Student Teacher Effort Category. The student teacher's effort or lack of effort was designated as responsible for conditions in the educational event. Student Teacher Effort Attributions were either Student Teacher Responsibility or Student Teacher Causality.

Student Teacher Responsibility. Comments classified as Student Teacher Responsibility were Descriptive Thoughts in which the student teacher was designated as responsible for conditions in the educational event, but the conditions in the educational event which the student teacher caused were not stated. Examples of Student Teacher Responsibility included the following:

I forgot to reinforce student's good ideas (so X happened).
My lesson was well planned but my management needs work (this caused. . .).
I should have noticed the boy behind me (because I didn't, so X occurred).
I want to learn to notice everything that's going on in the room (so that. . .).
I need to be enthusiastic with the kids even when I'm "in-the-pits" (so that. . .).
Next time, I will stick with Solitary and Control questions with this class (in order to. . .).
I used alot of different examples (so the students. . .).
In the future, I will manage the class better (so that...).
I missed 34 opportunities to reinforce students in this lesson (therefore. . .).
I said "sh" 60 times during the Spelling lesson (this helped to. . .).
I called roll (so. . .).
A long wait time is what I prefer (therefore. . .).
I should have split the students into two groups (so that. . .).
I didn't achieve my objective (because. . .).

Student Teacher Causality. Comments classified as Student Teacher Causality were Explanatory Thoughts in which the student teacher's effort or lack of effort was designated as responsible for causing conditions in the educational event. Examples of Student Teacher Causality included the following:

The lesson went well because I did a lot of planning.
When I asked Tom a question, he responded by participating more in the group.
I plan to seat the children so that their noise will not bother the other classes.
Next time I will not get thrown off the track when a student waves his arms.
My mood affected the students.

Because I did not work individually with the slow students, the other students got bored.
I corrected problem behavior by walking over and standing by those students.
My calling off task students by name helped them return to work.
My questions stimulated the students' participation.

It is important to note that Student Teacher Causality and the Student Teacher Responsibility differ only on the Type of Thought dimension. These categories are the same in terms of Attribution.

No Student Teacher Effort Category. The student teacher's effort was not designated as responsible for conditions in the educational event. No Student Teacher Effort Attributions were either No Attribution or Other Factors Causality.

No Attribution. Comments classified as No Attribution were Descriptive Thoughts in which no Student Teacher Causality, no Student Teacher Responsibility, nor Other Factors Causality was designated. Examples of No Attribution included the following:

The room was messy.
The materials weren't ready: the scissors were dull, the rulers were broken, and the pencils were missing.
The lesson was great today.
The answers at the back of the book were wrong.
A few of the students were off task noisy while others were on task noisy.
No workbooks!

Other Factors Causality. Comments classified as Other Factors Causality were Explanatory Thoughts in which luck, ability of the students, effort of the students, difficulty of the task, effort of a Significant Other, and/or other non-student teacher effort factors were designated as being responsible for causing conditions in educational event. Examples of Other Factors Causality included the following:

The lesson went poorly because the topic was uninteresting to the students. (Luck)
Harold couldn't sit still - he's hyperactive. (Innate characteristic of the student)
It's Valentine's Day, so the students were excited. (Difficulty of the task)
The students raised their hands, so I had to answer their questions. (Effort of the students)
Since this was such a difficult concept, I'm not surprised that the students had difficulty grasping it. (Difficulty of task)
My Cooperating Teacher's comments settled the students down. (Effort of another)
When the principal entered the room, the students became silent. (Effort of another)
The activity went well because I have a "knack" for teaching. (Ability not effort of student teacher)

Special Circumstances. Three special circumstances were identified related to Student Teacher Causality. First, when the subject of the comment was a plural pronoun or a compound subject (which included the student teacher and another adult or child), it was classified as Student Teacher Causality even though more than one person was designated as being responsible for causing conditions in the educational event. Examples included the following:

We called the students by name so that they would pay attention.
The students and I need to watch the time, so that we are not late to Music.

Second, when a significant other was reported as having seen certain student teacher behavior causing conditions in the educational event, this was classified as Student Teacher Causality. Examples included the following:

My Cooperating Teacher said that my comments calmed the students down.
The principal told me because I said "Be Quiet!" so many times, the students ignored it.
Patti observed that I enlarged my traffic pattern to include the students who usually do not participate.

Third, when the relationship of an Explanatory Thought depended on Thought Units that existed in a preceding comment, the classification of the second

comment as to Attribution may also depend upon the preceding comment. Examples included the following:

> I asked the students to tell me about a square. (Student Teacher Responsibility) They responded by telling me its essential attributes. (Teacher Causality)
> Tom sat quietly and did his work. (No Attribution) Perhaps this is because I had a private talk with him before class. (Student Teacher Causality)

Two special circumstances were identified related to Student Teacher Responsibility. First, when the comment had a plural pronoun or a compound subject (which included the student teacher and another adult or child), it was classified as Student Teacher Responsibility even though more than one person was designated as being responsible for conditions in the educational event. Examples included the following:

> We should have found a film on the Metric System.
> We worked hard to teach the concept: Democracy.
> The students and I helped make the day good.

Second, when a significant other was reported as having seen certain student teacher behaviors, these comments were classified as Student Teacher Responsibility. Examples included the following:

> The supervisor said that I said "Sh" 60 times during the Spelling lesson.
> Amy told me that I reinforced John's ideas many times during Math.

Three special circumstances were identified related to Other Causal Factors Causality. First, when a comment designated teacher behaviors as causing conditions in the educational event but the student teacher behaviors were implied, it was classified as Other Factors Causality. This was because the student teacher had not attributed the responsibility to him/herself. Examples included the following:

During the Math drill, Mass questions were used to stimulate student participation.
The positive reinforcement kept the students on task.

Second, when precepts of good teaching were stated or quoted as causing conditions in the educational event these comments were classified as Other Factors Causality, since they were not "owned" by the student teacher. Examples included the following:

Moving up and down the rows keeps the students' attention.
Mrs. White says calling students by name gets them to return to work.
A positive teacher attitude increases student motivation.

Third, when the relationship of an Explanatory Thought depended on Thought Units that existed in a preceding comment, the classification of the second comment as to Attribution occasionally also depended upon the preceding comment. Examples included the following:

Patti's data revealed a high percentage of positive reinforcement. (No Attribution) Perhaps this encouraged student participation (Other Causal Factors)
Sally was talking alot today. (No Attribution) This was because she has a big mouth. (Other Casual Factors)

Three special circumstances were identified related to No Attribution. First, when a comment implied teacher behaviors, the behaviors were <u>not</u> assumed to be the student teacher's behaviors. Therefore the comment was classified as No Attribution. Examples included the following:

"Okay" was said 35 times in the lesson.
The directions were clear.
A high percentage of positive reinforcement was given for good behavior.
Wording of the explanations was weak.

Second, when responsibility was assigned to a pupil but no Student Teacher Causality, no Teacher Responsibility, nor Other Factors Causality was indicated, it was classified as No Attribution. Examples included the following:

Billy was late to class.
Nikki doesn't know how to sound out words.
The children sorted the objects correctly and gave reasons for their choices.

Third, when the student teacher or a significant other made a judgment or shared a feeling about the educational event but did not designate who or what was responsible for causing the occurrence, it was classified as No Attribution. Examples included the following:

Today was a disaster.
I think the math activity worked.
I was pleased with the lesson.
Fantastic film!
Mrs. Knott said the lesson was great.
The principal thought there was some confusion when the students broke into small groups.

Discussion: Attribution Dimension

An analysis of the data collected on the Attribution dimension suggested that the theoretically based Attribution categories were reliable, exhaustive, and mutually exclusive. First, categories of the Attribution dimension were conceptualized based on a review of the literature. Second, definitions were constructed and sufficient category examples were collected for the Attribution dimension such that consistency across two time periods was 95%. Third, the Attribution categories were reliable as evidenced by raters' ability to classify to selected examples with 88.% accuracy of classification with the investigator and previous raters. Fourth, the Attribution categories were exhaustive as evidenced by raters' ability to classify all written comments of student teachers. And fifth, the Attribution categories were reliable such that two different groups of raters using different sets of lesson analyses (Fall, 1981 and Spring 1982) achieved an average 89.5% level of interrater agreement by the end of Phase II

and Phase III. Based upon this data, the Attribution categories were judged to be mutually exclusive.

Recommendations for Future Research on the Attribution Dimension

In the Attribution dimension, two areas in which further research should be considered were noted. Both were in the Other Causal Factor category of the Attribution dimension. The first area was based on the note including teacher behavior which was causal but which was implied in the Other Factors Causality category (e.g., Mass questions were used to stimulate student participation.). The second area came from the note including "precepts of good teaching" which were casual into the Other Factors Causality category (e.g., "Moving up and down the rows keeps the students' attention."). While in both of these kinds of comments the student teacher did not attribute his/her actions as causing conditions in the educational event, the causes were attributed to teacher behavior. Thus, these comments differed in quality from other comments classified as Other Factors Causality (e.g., "Harold couldn't sit still because he's hyperactive." and "The lesson went poorly because the topic was uninteresting."). Eventually, reasons for classifying these comments as Student Teacher Effort may be found. Until then it is suggested that attributions to another teacher's effort should be considered thoughtfully when using the PeeC Method to draw conclusions about student teachers' conceptual responses. Further research in these two areas would be useful to decide if these types of comments are appropriately classified in terms of attributions.

Comment Status

Comment Status was added because the investigator noted that some comments in the student teachers' written lesson analyses were not about the

educational event. The following section will report the development of Comment Status categories, category definitions, and category examples through the three phases of this study.

Phase I: Category Development of Comment Status

During Phase I Comment Status was defined as whether or not student teachers' comments were about the educational event. Written comments of student teachers about their educational events were grouped by Comment Status categories: Classified and Unclassified. Category definitions were written and examples of each category were collected. Early in the development of the categories of the Comment Status area, consistency across two time periods was 99% (see Table 13).

Table 13

Phase I: Reliability Across Two Time Periods on Comment Status

Dates	Raters	Student Teachers' Comments	Reliability
6-30-82 to 2-20-83	1	All Fall Comments 1981	98.0%
2-20-83 to 3-14-83	1	All Fall Comments 1981	99.0%

Phase II: Initial Interrater Reliability of Comment Status

Interrater agreement on Comment Status was tested by having three raters identify and classify by Comment Status categories the comments from randomly chosen lesson analyses. An analysis of raters' classifications of written comments by Comment Status indicated that the Status categories were

exhaustive since raters could classify all of the written comments they were given by categories of the area Comment Status. The Comment Status categories appeared precise since interrater agreement on the categories of Comment Status was 93% (see Table 14).

Lack of agreement in raters' classifications was found in one area. The disagreement concerned of whether a clause reporting the comments of a significant other was to be Classified or Unclassified. This was resolved by adding a note to the Classified Comment category, "When an individual is reported as making a comment(s) about the educational event, their act of reporting as well as what they report are considered as Classified Comments" and by adding the example, "My cooperating teacher suggested that I need to notice which students are not listening." After this modification was made, the Comment Status categories were tested using a different set of written comments. Although agreement dropped, it remained above 80%.

Table 14

Phase II: Initial Interrater Reliability

on Comment Status

Dates	Raters	Student Teachers' Comments	Reliability
4-21-83	3	30 Fall Comments	93.0%
4-29-83	3	30 Fall Comments	87.0%

Phase III: Follow-Up Reliability of Comment Status

First, the reliability of Comment Status was tested by having raters (a cooperating teacher, a public school administrator, and an instructional consultant) classify selected examples of written comment by Comment Status. Results of this test indicated 85% accuracy of classification with the investigator and previous raters.

Next, reliability on unselected written comments was investigated. Interrater agreement on Comment Status categories was 82% (see Table 15). A lack of agreement was noted in how raters classified sentence fragments. The definitions of Comments, Classified Comments, and Unclassified Comments were amended by adding the words "or sentence fragments". Also, examples of sentence fragments were added to the Classified and Unclassified Comment catgories. After these modifications were made, the Comment Status categories were tested using a different set of written comments. Interrater agreement on the Comment Status categories improved to 86%.

Table 15

Phase III: Follow-Up Interrater Reliability on Comment Status

Dates	Raters	Student Teachers' Comments	Reliability
5-16-83	3	Matching Category Definitions to Selected Examples	85.7% accuracy
5-16-83	3	30 Spring Comments	82.0% agreement
5-27-83	3	30 Spring Comments	86.0% agreement

Description: Comment Status

Comments were defined as the sentences or sentence fragments which the Student Teachers wrote analyzing an educational event for which they were responsible. The categories of the area Comment Status were Classified Comments and Unclassified Comments (see Appendix C: PeeC Dimensions and Category Definitions).

Classified Comment Category. A Classified Comment was a sentence or sentence fragment in statement form about an educational event or past/future educational events. Classified Comments were further classified along the four PeeC dimensions. Examples of Classified Comments included the following:

> We began a letter writing unit.
> The students were excited today.
> I gave lot of positive reinforcement to Todd and a lot of negative reinforcement to Ralph.
> In the future, I'll word my directions clearly.
> When Mass questions are used, the noise level in the room rises.
> Mrs. Smith noticed a little student participation in the lesson.
> The students being really tired. (Sentence fragment)

Unclassified Comment Category. Unclassified comments were sentences or sentence fragments about things other than the educational event such as the weather, car trouble, peer feedback, the observation, etc. All comments in question form were not classified. Unclassified Comments were not further classified along the four PeeC dimensions. Examples of Unclassified Comments included the following:

> My car ran out of gas on the way to work forcing me to be late.
> I didn't get much sleep last night.
> My cooperating teacher watched the lesson.
> The principal stopped by and asked how the lesson went.
> Alma asked me several questions that helped me think about my lesson.
> During the feedback session, we discussed the teaching method that I had used.

Awful feedback session. (Sentence fragment)
My supervisor recorded the students' responses to my "why" questions.
Why is it so difficult to give clear directions?
What should I do when Maria start crying?

Special Circumstances. Two special circumstances were identified related to Comment Status. First, when the student teacher reported the comment of another person about the educational event, the person's act of reporting as well as what they reported were considered Classified Comments. Examples included the following:

My cooperating teacher suggested that I need to notice which students are not listening.
Sue asked me how my action zone affected the students' behavior.

Second, when a Comment included both a Classified and an Unclassified clause, the clauses were handled as two separate Comments. Examples included the following:

I told my partner about my car trouble. . . (Unclassified Comment)
. . . and that while I had the examples for my lesson ready ahead of time, I had not thought out the questions to be used. (Classified Comment)

Discussion: Comment Status

An analysis of the data collected on Comment Status suggested that the theoretically based Comment Status categories were reliable, exhaustive, and mutually exclusive. First, categories of the Comment Status area were identified. Second, definitions were constructed and sufficient category examples were collected for the Comment Status such that consistency across two time periods was 95%. Third, the Comment Status categories were reliable as evidenced by raters' ability to classify selected examples with 85.7% accuracy of classification with the investigator and previous raters. Fourth, the Comment

Status categories were exhaustive as evidenced by raters' ability to classify all written comments of student teachers. And fifth, the Comment Status categories were reliable such that two different groups of raters using different sets of lesson analyses (Fall, 1981 and Spring, 1982) achieved an average 86.5% level of interrater agreement by the end of Phase II and Phase III. Based upon this data, the Comment Status categories were judged to be mutually exclusive.

Recommendations for Future Research on Comment Status

In Comment Status, one direction in which further development and research could be considered was noted. At this point in the development of the PeeC Method, only comments in statement form are classifiable. Perhaps, it would be useful to expand the PeeC Method to include comments in question form. This would enable supervisory questions to be classified and thus thoughtfully tailored to elicit information about or orient a student teacher to particular elements and relationships in the educational event.

The development of a method for classifying questions as Classified Comments would require changes in all four PeeC dimensions. Thought Unit dimension might drop out as a dimension or be limited to enumerating the number of questions asked. The Source dimension which has been dependent on the Thought Unit dimension would need to be restructured, not in terms of the categories (i.e., Teacher, Pupil, Significant Other, and Other), but in terms of how the Source(s) is identified. The question "Where were you standing during your math lesson?" would be focused on the Teacher. The question "How did the students participate? would be focused on the Pupils. And the question "How did where you stood influence the participation of the students sitting at the back of the room?" would be focused on the Teacher and the Pupils. When dealing with Classified Comments which are questions, the Source dimension's

name might be changed to Focus. The Type of Thought dimension categories might be changed from Descriptive Thoughts to Fact-Finding Questions and Explanatory Thoughts to Cause-and-Effect Questions. Then a question such as "Where were you standing during your math lesson?" could be classified as a Fact-Finding Question and a question such as "How did where you stood influence the participation of students sitting at the back of the room?" could be classified as a Cause-and-Effect Question. The Attribution category would remain basically the same. A question such as "What did you say to Jose?" would be attributed to the Student Teacher's Effort and a question such as "What did Jose say?" would have No Attribution to Student Teacher Effort. New dimension category definitions and examples for Classified questions would have to be constructed via the same three phase method development process that was used in the PeeC Method development. This addition of questions to the PeeC Method could extend the PeeC's usage. With the ability to classify questions as well as statements, the whole consultation/supervision/instruction process might be benefited.

PeeC Method

The four dimensions contained in the PeeC Method were: (a) Thought Unit, (b) Source, (c) Type of Thought, and (d) Attributions. In addition to the four PeeC dimensions, an area named Comment Status was used to determine whether or not a written comment from a student teacher was to be classified or not classified according to the four PeeC dimensions (see Appendix C: PeeC Dimension and Category Definitions for a complete version of the category definitions, category codes, and category examples). The following instructions, information summary procedure, and guidelines for interpretation of PeeC information were prepared to introduce the PeeC Method to potential users.

Instructions

The PeeC Method requires that a person planning to use the method memorize the dimensions, categories within the dimensions, and the category codes (see Appendix D: Recommended Training Procedure and Appendix E: PeeC Practice Sheets and Answer Sheets). Once these are learned to the extent that written comments can be classified along each of the four PeeC dimensions and the Comment Status, the person is ready to use the PeeC Method to obtain information about a student teacher.

Written comments from a particular student teacher about an educational event should be collected. In collecting written comments it is important to sample a number of lesson analyses per student teacher. Gottschalk and Gleser (1969) indicated that in determining a person's psychological state, the fewer the words in a verbal sample, the less reliable the sample was as an indicator of the person's psychological experience. Gottschalk and Gleser recommended that a minimum of 70 words were necessary to get an accurate estimation of the person's psychological state. Thus a sample of two to three different lesson analyses taken from a particular student teacher within a short time span (such as three weeks) would give a more accurate picture of a student teachers' conceptual responses than a single lesson analysis.

After written comments are collected the Status of each comment should be determined. Next, each Classified Comment should be further classified by category with each of the four PeeC dimensions. A condensed version of Comment Status and the four PeeC dimensions, category definitions, category codes, and category examples are provided in Figures 3, 4, 5, 6 and 7.

Figure 3

Comment Status and Category Definitions

COMMENT STATUS: Comments are the sentences or sentence fragments which the Student Teachers wrote analyzing an educational event for which they were responsible. Comments are either classified or unclassified.

Classified Comments: Classified Comments are sentences or sentence fragments in statement form about the educational event or past/future educational events.

Examples:
We began a letter writing unit.
The students were excited today.
I gave a lot of positive reinforcement to Todd and a lot of negative reinforcement to Ralph.
In the future, I'll word my directions clearly.
Mrs. Smith noticed little student participation in the lesson.
Poor lesson. (Sentence fragment)
My cooperating teacher suggested that I need to notice which students are not listening.

Unclassified Comments: Unclassified Comments are sentences or sentence fragments about things other than the educational event such as the weather, car trouble, peer feedback, the observation, etc. All Comments in question form are considered unclassified comments.

Examples:
My car ran out of gas on the way to work forcing me to be late.
I didn't get much sleep last night.
The principal stopped by and asked how the lesson went.
During the feedback session, we discussed the teaching method I had used.
Awful feedback session. (Sentence fragment)
Why is it so difficult to give clear directions?
What should I do when Maria starts crying?

Figure 4

Thought Unit Dimension and Category Definitions

THOUGHT UNITS: Thought Units are the separate aspects of the educational event which appear in clause, sentence, or sentence fragment form within the Classified Comments of the student teacher. Thought Units may appear separately, in a series, or linked in a relationship. The number of Thought Units is obtained by enumerating the clauses within one Classified Comment.

Examples: The students were great today. (One Thought Unit)
The room was stuffy. (One Thought Unit)
During the second half of the lesson, the students were on task. (One Thought Unit)
I should read slower when reading aloud. (One Thought Unit)
When I positively reinforce Sarah's ideas, she starts talking more. (Two Thought Units)
The cooperating teacher said, "You need to write clearly." (Two Thought Units)
Janie worked quietly at her desk and John worked at the Interest Center. (Two Thought Units)
Feedback from my supervisor indicated that I used targeted positive reinforcement. (Two Thought Units)
Todd attended when he got to answer a question and when he helped the teacher. (Three Thought Units)
The lesson went well and I was satisfied. (Two Thought Units)
Twenty-five out of twenty-seven students learned to spell the days of the week. (One Thought Unit)
Too much small group activity during math. (One Thought Unit).
Consequences!! (One Thought Unit)
Positive reinforcement and time-out were used to manage the students. (Two Thought Units)
Alice, Josy, and Marilyn were having difficulty with their handwriting. (Three Thought Units)
The students ran on the way to lunch and talked on the way to the bathroom. (Two Thought Units)
I made a Class rule, explained it to the students, and disciplined based on the rule. (Three Thought Units)
I asked more divergent questions than convergent ones. (Two Thought Units)
The children were able to sort the glass and the metal, but not the plastic. (Three Thought Units)

Figure 5

Source Dimension and Category Definitions

SOURCE: Source is the classification of the subject within each Thought Unit in a Classified Comment by topic. Sources are teacher, pupil, other, and significant other.

Teacher Source: (T) The subject of these Thought Units is a teacher (the Student Teacher or another teacher) who is responsible for or participates in the educational event.

Examples:
I did a terrible job today.
Mrs. Smith told Ralph to sit down.
I waited ten seconds on Maria.
Need to try something new with this group.
Thirty divergent questions were asked. (The teacher asked thirty divergent questions.)
We needed to have more time for the activity.

Pupil Source: (P) The subject of these Thought Units is the pupil(s).

Examples:
Jose's guess was "48".
The Turtle group finally learned to count.
Kelly ran down the hall.
The class was good all day.
The students seemed bored with the activity.

Significant Other Source: (SO) The subject of these Thought Units is an observer or adult other than the Student Teacher, who makes a comment about the educational event.

Examples:
Mrs. Smith reminded me to involve as many students as possible.
My supervisor noted the lack of manipulatives for each child.
Feedback from my cooperating teacher showed only negative reinforcement being used.

Other Source: (O) The subject of these Thought Units is things other than the teacher, pupils, or significant other. Some subjects that are Other Source include time, materials, classroom environment, content of the lesson, and teaching method.

Examples:
A tape on the metric system is needed.
The room felt cold today.
My activity lasted for only twenty minutes.
The Concept Attainment method was used.
A high noise level bothers me.
The students' papers were left on their desks.

Figure 5 continued

General Note: When more than one Thought Unit is identified in a Classified Comment, the subject of each Thought Unit is classified: Pupil/Pupil, Teacher/Teacher, Teacher/Pupil, Other/Teacher, Pupil/Other/Teacher, Significant Other/-Pupil, etc.

Examples: The students demonstrated their measurement device and then correctly measured their objects. (Pupil/Pupil)

My questions seemed to be at the higher cognitive levels, but my wait time was short. (Teacher/Teacher)

We waited until the whole class was attending. (Teacher/Pupil)

When the temperature in the room rose, I became frustrated. (Other/Teacher)

My cooperating teacher noted that students were talking a lot today. (Significant Other/Pupil)

The principal suggested that I must be consistant in my discipline. (Significant Other/Teacher).

Figure 6

Type of Thought Dimension and Category Definitions

TYPE OF THOUGHT: Type of Thought is the classification of each Classified Comment by whether or not a relationship/explanation is explored within or between Thought Units. The two Types of Thoughts are descriptive and explanatory.

Descriptive Thoughts: (D) Descriptive Thoughts report or describe the educational event but do not explore a relationship within the educational event.

Examples: The students raised their hands.
Kelly and Tim should be in another reading group.
I stood by the blackboard and presented the lesson.
The puppet was something new and the students were excited.
Either the lesson was too difficult or my students were not trying today.
Zoe was working quietly at his desk, but Sam was playing in the corner.

Explanatory Thoughts: (E) Explanatory Thoughts explore or report a relationship (usually but not limited to a cause and effect relationship) in the educational event. The relationship/explanation is usually between two Thought Units but may occur within one Thought Unit. Relationships may be stated in past, present, or future tense.

Examples: The students were able to follow along in their own books because I read slowly.
When Sarah comes to school all dressed up, she acts better.
Patti observed that the students who took longer to finish their work did better than the ones who rushed through it.
Next time I want to use something to get the students more involved.
If I ignore Heather's crying, it gets worse.
The filmstrip was a poor introduction because it overexcited the students.
I will enlarge my traffic pattern to include some students who do not usually participate.
My mood affects the students' mood.
The new puppet excited the students.
Although I gave clear directions, the students could not complete the art project.
Sometimes the kids do not respond to positive reinforcement.

Figure 7

Attributions Dimension and Category Defintions

ATTRIBUTION: Attribution is the determination of whether or not the Student Teacher accepts responsibility for (or is designated as responsible for) the educational event. Responsibility may be attributed to the Student Teacher's effort or not attributed to the Student Teacher's effort.

Student Teacher Effort: (+) The Student Teacher's effort/lack of effort is designated as responsible for things in the educational event.

Examples:
I forgot to reinforce students' good ideas.
My lesson was well planned but my management needs work.
I should have noticed the boy behind me.
I didn't achieve my objective.
We worked hard to teach the concept.
The supervisor said that I said "Sh" 60 times during the Spelling lesson.
When I asked Tom a question, he responded by participating more in the group.
I plan to seat the children so that their noise will not bother the other classes.
My Cooperating Teacher said that my comments calmed the students down.

No Student Teacher Effort: (-) The Student Teacher's effort is not designated as responsible for things in the educational event.

Examples:
The room was messy.
The lesson was great today.
The answers at the back of the book were wrong.
No work books!
The directions were clear.
Billy was late to class.
The lesson went poorly because the topic was uninteresting to the students. (Luck)
Harold couldn't sit still since he's hyperactive. (Innate ability of student)
The students raised their hands, so I had to answer their questions. (Effort of the students)
When the principal entered the room, the students became silent. (Effort of another)
The activity went well because I have a "nack" for teaching. (Ability <u>not</u> Effort of Student Teacher)

Information Summary Procedure

At this point, five kinds of summary information can be obtained which reflect the conceptual responses of a student teacher. First, the percentage of Classified to Unclassified Comments (Comment Status area of PeeC Method) in the student teacher's lesson analyses may be figured. Second, the average number of Thought Units the student teacher reported per lesson analysis may be calculated. Third, the percentages of each category of the Source dimension (i.e., Teacher, Pupil, Significant Other, and Other) may be determined. Fourth, the percentages of each category of the Type of Thought dimension (i.e., Descriptive or Explanatory) may be figured. And fifth, the percentages of each category in the Attribution dimension (i.e., Teacher Effort and No Student Teacher Effort) may be calculated.

Guidelines for Interpretation of PeeC Information

This summary information provides data about a student teacher's conceptual responses based upon their written comments about the educational events for which he/she is responsible. This information is valuable in that it indicates both what and how much the student teacher perceived as well as what meanings the student teacher made out of his/her perceptions (see Appendix F: Examples of Four Raters Use of the PeeC Method).

When interpreting results from the PeeC Method, five points should be considered. First, it was assumed that written comments of the student teachers were at least a minimal representation of their verbal comments and their non-verbalized thoughts. This assumption is based upon Gottschalk and Glesers' (1969) successful results in measuring individuals' psychological states through analysis of their written and oral statements. Second, no assumptions were made about the accuracy of student teachers' written comments since

whether or not their perceptions and inferences are accurate, their behavior (or future behavior) is based upon them (Winne & Marx, 1979). A third consideration is that in using written lesson analyses to measure student teachers' growth, the practice (or chore) of writing comments and/or intervening instruction may influence the data gathered from the lesson analyses. A fourth consideration is that even well trained raters make errors in how they classify comments. In order to reduce errors in the how the dimension categories are interpreted by raters, it is useful to occasionally compare two trained raters' classifications of a single lesson analysis. A fifth consideration is that the PeeC Method is designed to collect information on a student teacher's current conceptual responses, and thus the span of time for which the data are generalizable is limited by the student teacher's rate of development. Each of these five points needs to be considered when using the PeeC Method to gather data.

CHAPTER V

SUMMARY, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

Initial steps were taken in the development of an objective and quantifiable method for collecting information on student teachers' conceptual responses to educational events. The method was named the PeeC Method. The PeeC Method utilized written comments as evidence of student teachers' conceptual responses.

Summary

Through a review of the literature the investigator identified four constructs as possible means for collecting information on (a) how much of particular educational events student teachers perceived, (b) what elements of the educational events were perceived, (c) what meanings student teachers created from their perceptions, and (d) what responsibility they took for what occurred. The literature suggested these constructs may be related to student teachers' stage of cognitive development, amount of experience, and degree of maturity.

One construct that was identified to collect information on individuals' conceptual responses was how much of a situation or problem was perceived and/or recalled. Individuals with more experience and at higher stages of cognitive development tended to identify more elements in a particular situation or problem (Hunt, 1971; Glickman, 1981b). The Thought Unit dimension was

therefore created as a means for identifying and quantifying the separate elements student teachers recalled about their educational events. The grammatical clause was chosen as the means for identifying and enumerating Thought Units.

A second construct that was identified to collect information on individuals' conceptual responses was, what elements in a situation or problem were selectively perceived. The Source dimension was therefore created as a means for identifying and quantifying what elements in an educational event student teachers perceived. Four elements were identified as characteristic concerns of student teachers and teachers (Fuller, 1969; Adams, 1982). These four elements: Self, Pupils, Significant Others, and Other became the categories in the Source Dimension. These categories are important since Fuller (1969), Adams (1982), and McKidden and Joyce (1981) reported that a change in what was selectively perceived as important.

A third construct that was identified to collect information on individuals' conceptual responses was whether or not individuals constructed relationships among the elements perceived in the educational event. Individuals at higher stages of cognitive development and those with more experience tended to integrate and connect their perceptions into relationships Shayer & Adey, 1981; Glassberg, 1979; Harvey, Hunt, & Schroder, 1961). The Type of Thought dimension was therefore created as a means for identifying whether student teachers reported the elements within an educational event (Descriptive category) or constructed relationships among the elements in the educational event (Explanatory category).

A fourth construct that was identified to collect information on individuals' conceptual responses was the inferences they formed about causality. Since

individuals differed in their characteristic ideas about causes and that the kind of attributions individuals had influenced their performance (Bar Tal, 1978; Kelley, 1973; Weiner, 1972), the Attribution dimension was created. The two categories (Student Teacher Effort or No Student Teacher Effort) within the Attribution dimension were identified to collect information on who or what student teachers designed as responsible for what occurred in an educational event.

These four constructs served as the theoretical base for the four PeeC dimensions for classifying student teachers' written comments so that evidence of their conceptual responses to educational events could be identified. The development of the PeeC dimensions involved the collection of student teachers' written comments about educational events and a three phase procedure for testing the reliability of the categories within each dimension of the PeeC Method.

Data collected during Phase I: Category Development; Phase II: Interrater Reliability; and Phase III: Follow-Up Interrater Reliability were analyzed. The results indicated that the theoretically based categories, category definitions, and category examples within each PeeC dimension were reliable, exhaustive, and mutually exclusive. First, the categories, definitions, and examples within each PeeC dimension were based upon a review of the literature. Second, the categories were reliable as evidenced by the investigator's ability to classify written comments across two time periods with over 80% consistency. Third, the categories within each PeeC dimension were reliable as evidenced by raters' abilty to classify selected examples with over 80% accuracy of classification with the investigator and previous raters. Fourth, the categories within each PeeC dimension were exhaustive as evidenced by raters' ability to classify all

written comments of student teachers. And fifth, the categories within each PeeC dimension were reliable and mutually exclusive such that two different groups with three raters each, achieved over 80% interrater agreement by the end of Phase II and again by the end of Phase III.

Conclusions

The PeeC Method was found to be a reliable tool with some face validity for acquiring information in quantifiable form about student teachers' conceptual responses to educational events. First, it was possible to collect written comments from student teachers which reflected, at least partially, their thoughts about educational events (see Appendix A: Examples of Lesson Plan and Lesson Analysis Forms and Appendix B: Lesson Analyses from Student Teachers #30, #31, and #32). Second, theoretically based dimensions and categories for classifying and quantifying conceptual responses of student teachers could be developed (see Appendix C: PeeC Dimension and Category Definitions). Third, raters could be trained to classify written comments about educational events (see Appendix D: Recommended PeeC Training Procedure and Appendix E: PeeC Practice Sheets and Answer Sheets). Fourth, it was possible to achieve reliability using the PeeC Method. And finally, the PeeC Method appears to have some initial validity since it was constructed from current theories on cognitive development.

Limitations

The investigator identified four limitations of the PeeC Method. First, it was assumed that the format for collecting student teachers' written comments (lesson analysis forms and instructional requirements) did not operate to alter the student teachers' usual conceptual responses. The legitimacy of this

assumption is not known. Second, written comments from elementary student teachers in only one student teaching program were collected. It is not known how peculiarities of this program and the fact that all the student teachers were elementary education majors may have influenced the written comments from which the PeeC dimension categories, category definitions, or category examples were constructed. Third, while the PeeC Method had a high level of reliability across time and with two different sets of raters, it is not known if this degree of reliability will be replicable when the PeeC Method is used by other raters using written comments from different student teachers or teachers currently in the field. Fourth, this study of the PeeC Method stressed reliability. Further studies will be necessary to establish validity, i.e., that the PeeC Method indeed quantifies the student teachers' conceptual responses to educational events.

Recommendations

Recommendations for further development of each of the four PeeC dimensions were included in Chapter IV. The following recommendations for further research on the PeeC Method as a whole were made:

Reliability Studies

1. Determine if the PeeC Method for classifying conceptual responses to educational events will be reliable when used by other raters using written comments of student teachers and teachers at other locations.
2. Determine the number of lesson analyses which will be needed from a particular teacher to get a stable indication of his/her current conceptual responses to educational events.

Validity Studies

1. Determine if differences in conceptual responses of student teachers as measured by the PeeC Method will be related to ratings by supervisors using Glickman's (1981a) abstraction and committment scales.
2. Determine if differences in conceptual responses of student teachers as measured by the PeeC Method will be related to the stages of cognitive development as measured by Piagetian interviews.
3. Determine if differences in task specific attributions of student teachers as measured by the PeeC Method will be related to general attribution scores on the Individual Achievement Responsibility Questionnaire (Tollefson, et al., 1982).
4. Determine if differences in subject matter of student teachers' and teachers' written comments as measured by the PeeC Method will be related to the concerns Fuller (1969) identified as characteristic of student teachers and teachers at varying stages of development.
5. Determine if the four dimensions of the PeeC Method will be independent or correlated.
6. Determine if data gathered using the PeeC Method will successfully discriminate between pre-service teachers and experienced teachers.
7. Determine if data gathered using the PeeC Method will successfully discriminate between teachers who are identified by administrators as ineffective and those who are identified as effective.
8. Determine if differences in conceptual responses of student teachers as measured by the PeeC Method will predict student teachers who drop out of student teaching or teaching.

Additional Studies

1. Determine if information collected from written lesson analyses will differ from that collected from oral lesson analyses (Gottschalk and Glesner, 1969).
2. Determine if changes in instructions for collecting comments about educational events or change in stimulus instruments (e.g., more open or more structured) will improve the data collected when using the PeeC Method.
3. Evaluate the Recommended PeeC Training Procedure (see Appendix D) to see if it will be effective and accurate when used to train various individuals.

Future Directions

Since the decisions teachers make are critical for teaching effectiveness (Medley and Cook, 1981), it is important for researchers, teacher educators, and supervisory personnel to have a means for documenting teachers' attempts at conceptualizing educational events. If additional research establishes sufficient validity and reliability, some uses that might be made of the PeeC Method may be to measure student teachers' and teachers' conceptual growth across time and tailor instructional and supervisory interventions.

Measurement Tool

The PeeC Method may make available a quantifiable means for documenting student teachers' conceptual growth. By obtaining the average number of Thought Units a student teacher reports about a series of educational events, the increase or decrease in the number of elements which the student teacher perceived/recalled may be noted. This would give an indication of how

many elements in an educational event the student teacher differentiated. By obtaining the percentage of Thought Units falling into each category of the Source dimension, it could be seen if the subject matter of the student teacher's thought changed. By determining the percentage of Type of Thought categories per lesson analysis, it could be noted whether or not the student teacher reported seeing more relationships. Finally, by determining the percentage of comments falling into each category of the Attribution dimension, it could be noted whether or not the attributions that the student teacher made to his/her own effort increased or decreased.

Instructional and Supervisory Tool

The PeeC Method may also be used to collect information on student teachers' conceptual responses so that instructional and supervisory interventions may be tailored to student teachers' stage of cognitive development, amount of experience, and degree of maturity (Appendix F: Examples of Four Raters Use of the PeeC Method). If a student teacher reported only a limited number of perceptions about an educational event, reported mostly perceptions about self, reported these perceptions descriptively, and failed to attribute responsibility for what occurred to his/her own effort, this information would indicate that the teacher may have a low level of task maturity according to Hambleton, Blanchard, and Hersey's method (1977) or Glickman's method (1981 a & b). This student teacher would need to be dealt with in a direct instructional and/or supervisory style (Glickman, 1981b, p. 53). Instructional or supervisory goals for a student teacher with low task maturity might be to increase the number of his/her perceptions about the educational event, expand the number of perceptions about pupils, develop the number of relationships that are noticed (particularly relationships between the student teacher's own behavior and the

pupils' responses), and extend the responsibility the student teacher takes for what occurs.

If a student teacher reported many different perceptions about an educational event, reported perceptions not only about self but also about pupils and other elements of the educational event, reported not only what occurred but saw relationships among different elements of the educational event, and attributed responsibility for what occurred to his/her own effort, this information would indicate the student teacher may have a high level of task maturity according to Hambleton, Blanchard, and Hersey's method (1977) or Glickman's method (1981b). This student teacher would need to be dealt with in a more indirect instructional and/or supervisory style (Glickman, 1981b). An instructional or supervisory goal for the student teacher with higher task maturity might be to increase awareness of important aspects of the educational event.

In conclusion according to Hunt (1971) in order for teachers to be effective they need three major abilities. First, teachers need to be able to observe important elements within their educational events. Observation systems such as the Verbal Interaction Category System (Amidon & Flanders, 1967) have provided means for teachers to better understand their pattern of teaching and their interactions with students. Second, teachers need to be able to utilize many teaching skills. The teaching models which Joyce and Weil (1972) and others have compiled has provided teachers with a means for acquiring a repertoire of teaching competencies. Third, teachers need to be able to purposefully decide which strategies to use to achieve particular goals. The PeeC Method for collecting information on teachers' conceptual responses to their educational events will hopefully be used to improve teachers' abilities to conceptualize the educational events for which they are responsible. Improved

conceptualizations along with better abilities to observe and a larger repertoire of competencies are according to Hunt (1971) the three major abilities of effective teachers. As teachers' abilities are improved in each of these areas, students' learning will hopefully benefit.

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APPENDIX A

Examples of Lesson Plan and Lesson Analysis Forms

MODEL LESSON

Teaching Topic: _____ Date: _____

Lesson Objective:

Method:

Materials:

Purpose of Observation (desired learnings):

Summary of Feedback Received: Lesson Analysis

From Peer

From Cooperating Teacher and/or Supervisor

Your Reactions, Thoughts, Future Plans:

DEMONSTRATION LESSON

Fact/Concept: _____ Date: _____
(Circle one)

Lesson Objective:

Purpose of Observation:

Step by Step Techniques:

Materials:

Lesson Analysis

Summary of Feedback Received from Peer/Cooperating Teacher/Supervisor (Circle one):

Your Reactions and Thoughts:

Future Plans:

APPENDIX B

Lesson Analyses from Student Teachers #30, #31, and #32

Student Teacher #30

Rater # _____
Lesson Analysis
12-16-81

_____ 1. The lesson went well.

_____ 2. I had the high reading group.

_____ 3. I explained the directions and the students read the story.

_____ 4. After the story, Kathy said I asked a lot of questions.

_____ 5. I have a definite OKAY problem.

_____ 6. I said OKAY 34 times.

_____ 7. I ignored a lot of the students' ideas but I did reinforce some good behavior.

_____ 8. I felt satisfied with the lesson.

Comments:

Student Teacher #31

Rater # _____
Lesson Analysis
12-10-81

_____ 1. The activity went very well considering I had the low reading group.

_____ 2. I gave instructions and the students did their workbooks.

_____ 3. During the small group, Edna said I asked mostly recall questions.

_____ 4. She reported that I said "Be Quiet" 21 times.

_____ 5. I negatively reinforced the students' behavior but these kids are so hyper, I had to.

_____ 6. Overall, I was pleased with the activity.

Comments:

Student Teacher #32

Rater # _____
Lesson Analysis
12-3-81

_____ 1. Janie did her assignment neatly, but she never smiled.

_____ 2. Today I saw her mumbling to herself, but when she saw me watching her, she quit.

_____ 3. I thought at first she might warm up to me if I took the initiative.

_____ 4. I talked to her privately, but she would not look at me and obviously wanted only to get away.

_____ 5. Then I looked over her work and noticed how very neat it was and how carefully she had done every little thing.

_____ 6. I thought maybe she was under some kind of pressure and—this sounds silly—that she was afraid of making any mistake.

_____ 7. Today when I said, "Someone isn't listening" meaning someone else, she looked as though I meant her.

_____ 8. I thought what I said made her feel guilty.

_____ 9. Maybe she feels guilty about any little thing.

_____ 10. I told the class a story about a broken vase in a family and each student wrote an ending for it.

_____ 11. Janie wrote, "The wind blowed and it fell off by itself. I didn't do it. I did NOT."

_____ 12. I need to write notes on Janie's papers so that she'll feel good about her work.

_____ 13. Maybe this will help me build a relationship with her.

_____ 14. I'll try to help her realize that even if she makes a mistake that she's not a bad person.

Comments:

APPENDIX C

PeeC Dimension and Category Definitions

PeeC Dimension and Category Definitions

COMMENT STATUS: Comments are the sentences or sentence fragments which the Student Teachers wrote analyzing an educational event for which they were responsible. Comments are either classified or unclassified.

*Classified Comments: (C) Classified Comments are sentences or sentence fragments in statement form about the educational event or past/future educational events.

Examples:
We began a letter writing unit.
The students were excited today.
I gave a lot of positive reinforcement to Todd and a lot of negative reinforcement to Ralph.
In the future, I'll word my directions clearly.
When Mass questions are used, the noise level in the room rises.
Mrs. Smith noticed little student participation in the lesson.
The students being really tired. (Sentence fragment)
Poor lesson. (Sentence fragment)

Note: When the Student Teacher reports the Comment of another person about the educational event, the person's act of reporting as well as what they report are considered as Classified Comments.

Examples:
My cooperating teacher suggested that I need to notice which students are not listening.
Sue asked me how my action zone affected the students' behavior.

*Unclassified Comments: (U) Unclassified Comments are sentences or sentence fragments about things other than the educational event such as the weather, car trouble, peer feedback, the observation, etc. All Comments in question form are considered unclassified comments.

Examples:
My car ran out of gas on the way to work forcing me to be late.
I didn't get much sleep last night.
My cooperating teacher watched the lesson.
The principal stopped by and asked how the lesson went.

Alma asked me several questions that
helped me think about my lesson.
During the feedback session, we discussed the
teaching method I had used.
Awful feedback session. (Sentence fragment)
My supervisor recorded the students' responses
to my "why" questions.
Why is it so difficult to give clear directions?
What should I do when Maria starts crying?

Note: When a Comment includes both Classified and Unclassified clauses, handle the clauses as two separate Comments.

Examples: I told my partner about my car trouble (Unclassified Comment)
and that while I had the examples for my lesson ready ahead of time, I had not thought out the questions to be used. (Classified Comment)

THOUGHT UNITS: Thought Units are the separate aspects of the educational event which appear in clause, sentence, or sentence fragment form within the Classified Comments of the Student Teacher. Thought Units may appear separately, in a series, or linked in a relationship. The number of Thought Units is obtained by enumerating the clauses within one Classified Comment.

*A clause is a group of words that has a subject and a finite verb. (Phrases lack a subject and a finite verb.) Clauses may be independent: "The girls tossed the ball" or dependent: "When the girls tossed the ball". Dependent clauses may be adjective clauses as "The student, who threw the eraser, was new," or adverb clauses as "When the students finished, I gave new directions," or noun clauses as "That I was angry was easy for the students to see," and "Tom said he would not sit down."

Examples: The students were great today. (One Thought Unit)
There were ten opportunities to reinforce in my lesson. (One Thought Unit)
The room was stuffy. (One Thought Unit)
During the second half of the lesson, the students were on task. (One Thought Unit)
I should read slower when reading aloud. (One Thought Unit)
I used Control questions to keep the class in order. (One Thought Unit)
It is hard to use reinforcement during a drill. (One Thought Unit)
When I positively reinforce Sarah's ideas, she starts talking more. (Two Thought Units)
The cooperating teacher said, "You need to write clearly." (Two Thought Units)
Janie worked quietly at her desk and John worked at the Interest Center. (Two Thought Units)
Feedback from my supervisor indicated that I used targeted positive reinforcement. (Two Thought Units)
Todd attended when he got to answer a question and when he helped the teacher. (Three Thought Units)

Note: Thought Units may be general or specific.

Examples: The lesson went well and I was satisfied. (Two general Thought Units)
Twenty-five out of twenty-seven students learned to spell the days of the week. (One specific Thought Units)

I used lots of reinforcement today. (One general Thought Unit)
I positively reinforced Alex's behavior four times and gave corrective feedback to him twice. (Two specific Thought Units)

Note: When a Classified Comment is a sentence fragment, classify it as a Thought Unit.

Examples: Too much small group activity during math. (One Thought Unit).
Consequences!! (One Thought Unit)

Note: When a Classified Comment has a compound or multiple subjects, classify it as two (or more) Thought Units.

Examples: Positive reinforcement and time-out were used to manage the students. (Two Thought Units)
Alice, Josy, and Marilyn were having difficulty with their handwriting. (Three Thought Units)

Note: When a Classified Comment has a compound or multiple finite verbs, classify it as two (or more) Thought Units.

Examples: The students ran on the way to lunch and talked on the way to the bathroom. (Two Thought Units)
I made a Class rule, explained it to the students, and disciplined based on the rule. (Three Thought Units)

Note: When a Classified Comment has compound or multiple direct objects, classify it as two (or more) Thought Units.

Examples: I asked more divergent questions than convergent ones. (Two Thought Units)
The children were able to sort the glass and the metal, but not the plastic. (Three Thought Units)
We needed a filmstrip on the Metric System and one on Fractions. (Two Thought Units)
The data was: 3 Voluntary, 5 Control, and 1 Mass question. (Three Thought Units)

Note: When a Classified Comment has both a double (or multiple) subject(s) and a double (or multiple) predicate(s), classify it as four (or more) Thought Units.

Examples: Van and Amber stacked the blocks and then knocked them down. (Four Thought Units)
Chris, Amy, and Ralph all worked quietly and waited their turn in line. (Six Thought Units).

SOURCE: Source is the classification of the subject within each Thought Unit in a Classified Comment by topic. Sources are teacher, pupil, other, and significant other.

*Teacher Source: (T) The subject of these Thought Units is a teacher (the Student Teacher or another teacher) who is responsible for or participates in the educational event.

Examples: I did a terrible job today.
Mrs. Smith told Ralph to sit down.
I waited ten seconds on Maria.
Need to try something new with this group.
I used negative reinforcement on two students.

Note When teacher behavior is implied, classify the subject of the Thought the Thought Unit as Teacher Source. Some teacher behaviors that are often implied include cuing participation, questioning, wait time, reinforcement, action zone, and direction giving.

Examples: My directions were not clear. (I gave unclear directions.)
Thirty divergent questions were asked. (The teacher asked thirty divergent questions.)
My pattern of reinforcement has improved. (I have improved my pattern of reinforcement.)
The management of the class was better than yesterday. (I managed the class better than yesterday.)
My planning was effective. (I planned effectively.)

Note: When the subject of a Thought Unit is a plural, involving a teacher and someone else, classify the Source as Teacher.

Examples: We needed to have more time for the activity.
All of us enjoyed the lesson.

*Pupil Source: (P) The subject of these Thought Units is the pupil(s).

Examples: Jose's guess was "48".
Henry wrote a creative story.
The Turtle group finally learned to count.
Kelly ran down the hall.
The class was good all day.
Jo Ann cried all afternoon.
The students seemed bored with the activity.

*Significant Other Source (SO): The subject of these Thought Units is an observer or adult other than the Student Teacher, who makes a comment about the educational event.

Examples:
Mrs. Smith reminded me to involve as many students as possible.
My supervisor noted the lack of manipulatives for each child.
Amy heard only recall questions being asked during the Science lesson.
Feedback from my cooperating teacher showed only negative reinforcement being used.
The data revealed a limited movement pattern on the part of the teacher.

*Other Source (O): The subject of these Thought Units is things other than the teacher, pupils, or significant other. Some subjects that are Other Source include time, materials, classroom environment, content of the lesson, and teaching method.

Examples:
A tape on the metric system is needed.
The room felt cold today.
My activity lasted for only twenty minutes.
The Concept Attainment method was used.
Noun was the concept.
A high noise level bothers me.
The lesson was not planned by me.
The students' papers were left on the desks.

General Note: When more than one Thought Unit is identified in a Classified Comment, the subject of each Thought Unit is classified: Pupil/Pupil, Teacher/Teacher, Teacher/Pupil, Other/Teacher, Pupil/Other/Teacher, Significant Other/-Pupil, etc.

Examples:
The students demonstrated their measurement device and then correctly measured their objects. (Pupil/Pupil)
My questions seemed to be at the higher cognitive levels, but my wait time was short. (Teacher/-Teacher)
We waited until the whole class was attending. (Teacher/Pupil)
After I named the properties of the objects, the students sorted them. (Teacher/Pupil)
When the temperature in the room rose, I became frustrated. (Other/Teacher)
Kelly and Mathew picked up the trash. (Pupil/-Pupil).

I positively reinforced students' good behavior and corrected their wrong answers as each student responded. (Teacher/Teacher/Pupil)

I used Solitary, Controlled, and Voluntary Questions in my lesson. (Teacher/Teacher Teacher)

My cooperating teacher noted that students were talking a lot today. (Significant Other/Pupil)

Cathy was concerned about how I distributed my questions only to the students in the front row. (Significant Other/Teacher)

Lis recorded that thirty questions were asked. (Significant Other/Teacher)

The principal suggested that I must be consistant in my discipline. (Significant Other/Teacher).

My supervisor's data revealed a high percentage of positive reinforcement of students' ideas and a high negative reinforcement for behavior. (Significant Other/Significant Other)

General Note: When the subject of a Thought Unit is an indefinite pronoun (this, that, etc.) that refers to a previous Comment or Thought Unit, classify the Source of the Thought Unit according to what the pronoun refers.

Example: I was pleased with the lesson. (Teacher) That was because the students participated. (Teacher)

TYPE OF THOUGHT: Type of Thought is the classification of each Classified Comment by whether or not a relationship/explanation is explored within or between Thought Units. The two Types of Thoughts are descriptive and explanatory.

***Descriptive Thoughts: (D)** Descriptive Thoughts report or describe the educational event but do not explore a relationship within the educational event.

Examples: The students raised their hands.
I would like to use more Spontaneous questions.
The film on fractions was too short and very complex.
Both Kelly and Tim should be in another reading group.
I stood by the blackboard and presented the lesson.
I noticed the boy on the back row was talking and I saw that Sarah was out of her seat twice during the lesson.

Note: When a coordinating conjunction (as and, but, or, nor), a dash, or a semicolon connects two (or more) Thought Units within a Comment but no relationship is explored, the Comment is classified as a Descriptive Thought.

Examples: The puppet was something new and the students were excited.
Either the lesson was too difficult or my students were not trying today.
I will use the same lesson plans next time - the lesson went well.
Zoe was working quietly at his desk, but Sam was playing in the corner.
One time she reinforced a wrong answer; another time she criticized a correct answer.

Note: When conditions or circumstances under which the event occurred (e.g., the antecedents) are reported but no relationship is explored (e.g., no consequences are reported), the Comment is classified as a Descriptive Thought.

Examples: During the Spelling Test, Controlled questions were used.
In the future, I would like to ease into more Voluntary and Spontaneous questions.

*Explanatory Thoughts: (E) Explanatory Thoughts explore or report a relationship (usually but not limited to a cause and effect relationship) in the educational event. The relationship/explanation is usually between two Thought Units but may occur within one Thought Unit. Relationships may be stated in past, present, or future tense.

Examples: Since I gave lots of positive reinforcement, I didn't have to give as many negative reinforcements.
The students will be able to follow along in their own books because I will read slowly.
When Sarah comes to school all dressed up, she acts better.
Patti observed that the students who took longer to finish their work did better than the ones who rushed through it.
I would like to use a longer wait time so that the students have plenty of time to create new ideas.
From the data I realized that the children who participated most during the warm-up activity got the best grades on the worksheet.
Next time I want to use something to get the students more involved.
If I ignore Heather's crying, it gets worse.
Given a new topic, I would like to use more Spontaneous questions, since it will give the students time to think.

Note: Many times the relationship that is explored is an explanation of aspects of the educational event.

Examples: The filmstrip was a poor introduction because it overexcited the students.
I felt good because I used ignoring in the correct way.
I had good control most of the time which was what I wanted with the Voluntary question type.
I will enlarge my traffic pattern to include some students who do not usually participate.
I called on a variety of students when they volunteered by raising their hands.

Note: Occasionally a relationship or explanation is reported/proposed via one Thought Unit.

Examples: The seating arrangement affected the distribution of teacher comments.
Reinforcement will encourage the students to make more comments.

I used Solitary questions to keep the class in order.
Most of the students will be involved due to the boardwork.
My mood affects the students' mood.
In this low class, a positive teacher attitude increases student motivation.
The new puppet excited the students.

Note: Occasionally the relationship that is explored is not thought/not found to be true. Whether or not the lack of relationship is accurate, the Comment is classified as an Explanatory Thought.

Examples: Although I gave clear directions, the students could not complete the art project.
I do not plan on changing my lesson plans since the lesson went well.
Sometimes the kids do not respond to positive reinforcement.
I'm not going to feel guilty for using negative reinforcement.

Note: The relationship in an Explanatory Thought may depend on Thought Units that exist in a preceeding Comment.

Examples: Only half the class knows the answer. (Descriptive Thought)
Maybe the teacher needs to bring the lesson down to the students' level of thinking by using concrete examples. (Explanatory Thought)
My Cooperating Teacher asked me where I stood. (Descriptive Thought) This made me realize that I had not asked the students on my right any questions. (Explanatory Thought)
I asked, "What can we say about a square?" (Descriptive Thought) They responded by giving me the essential attributes of a square. (Explanatory Thought)

Note: Ocassionally the relationship of an Explanatory Thought is embedded in the Comment.

Examples: I ask more questions of low achievers than I do of high achievers.
I gave individual instructions to those who did not understand.
The students who finished first did not do the best work.

ATTRIBUTION: Attribution is the determination of whether or not the Student Teacher accepts responsibility for (or is designated as responsible for) the educational event. Responsibility may be attributed to the Student Teacher's effort or not attributed to the Student Teacher's effort.

*Student Teacher Effort: The Student Teacher's effort/lack of effort is designated as responsible for things in the educational event. Student Teacher Effort Attributions are either Student Teacher Causality or Student Teacher Responsibility.

Student Teacher Responsibility: (+) These Comments are Descriptive Thoughts in which the Student Teacher's effort/lack of effort is designated as responsible for things in the educational event, but the things in the educational event which the Student Teacher caused are not stated.

Examples:
I forgot to reinforce students' good ideas (so X happened).
My lesson was well planned but my management needs work (this caused ...).
I should have noticed the boy behind me (because I didn't, X occurred).
I want to learn to notice everything that's going on in the room (so that...).
I need to be enthusiastic with the kids even when I'm "in the pits." (so that...)
Next time, I will stick with Solitary and Control questions with this class (in order to ...).
I used a lot of different examples (so the students ...).
In the future, I will manage the class better (so that ...).
I missed 34 opportunities to reinforce students in this lesson (therefore ...).
I said "Sh" 60 times during the Spelling lesson (this helped to ...).
I called roll (so ...).
A long wait time is what I prefer (therefore ...).
I should have split the students into two groups (so that ...).
I didn't achieve my objective (because ...).

Note: When the Source of the Comment is a plural pronoun or a compound subject (which includes the Student Teacher and another adult or pupil), classify it as Student Teacher Responsibility even though more than one person is designated as being responsible for things in the educational event.

Examples:
We should have found a film on the Metric System.
We worked hard to teach the concept: Democracy.
The students and I helped make the day good.

Note: When a Significant Other is reported as having seen certain Student Teacher behaviors, this is classified as Student Teacher Responsibility.

Examples: The supervisor said that I said "Sh" 60 times during the Spelling lesson.
Amy told me that I reinforced John's ideas many times during Math.

Student Teacher Causality: (++) These Comments are Explanatory Thoughts in which the Student Teacher is designated as responsible for causing things in the educational event.

Examples: The lesson went well because I did a lot of planning.
When I asked Tom a question, he responded by participating more in the group.
I plan to seat the children so that their noise will not bother the other classes.
Next time I will not get thrown off the track when a student waves his arms.
My mood affected the students.
Because I did not work individually with the slow students, the other students got bored.
I corrected problem behavior by walking over and standing by those students.
My calling off task students by name helped them return to work.
My questions stimulated the students' participation.

Note: When the subject of the comment is a plural pronoun or a compound subject (which includes the Student Teacher and another adult or pupil), classify it as Student Teacher Causality even though more than one person is designated as being responsible for causing things in the educational event.

Examples: We called the students by name so that they would pay attention.
The students and I need to watch the time, so that we are not late to Music.

Note: When a Significant Other is reported as having seen certain Student Teacher behaviors causing things in the educational event, this is classified as Student Teacher Causality.

Examples: My Cooperating Teacher said that my comments calmed the students down.
The principal told me that because I said "Be quiet!" so many times, the students ignored it.
Patti observed that I enlarged my traffic pattern to include the students who usually do not participate.

Note: When the relationship of an Explanatory Thought depends on Thought Units that exist in a preceeding Comment, the classification of the second Comment as to Attribution may also depend upon the preceeding Comment.

Examples: I asked the students to tell me about a square. (Student Teacher Responsibility) They responded by telling me its essential attributes. (Student Teacher Causality)
Tom sat quietly and did his work. (No Attribution) Perhaps this is because I had a private talk with him before class. (Student Teacher Causality)

*No Student Teacher Effort: The Student Teacher's effort is not designated as responsible for things in the educational event. Instead, either Other Factors Causality are held responsible or No Attribution of Student Teacher Effort is made.

No Attribution: (0) These are Descriptive Thoughts in which no Student Teacher Causality, no Student Teacher Responsibility, nor Other Factors Causality are designated as responsible for things in the educational event.

Examples: The room was messy.
The materials weren't ready: the scissors were dull, the rulers were broken, and the pencils were missing.
The lesson was great today.
The answers at the back of the book were wrong.
A few of the students were off task noisy while others were on task noisy.
No work books!

Note: When a Comment reports teacher behavior and the teacher behavior is implied, the behavior is <u>not</u> assumed to be the Student Teacher's own behavior and therefore is classified as No Attribution.

Examples: "Okay" was said 35 times in the lesson.
The directions were clear.
A high percentage of positive reinforcement was given for good behavior.
Weak wording of the explanations.

Note: When responsibility is assigned to a pupil but no Student Teacher Causality, no Teacher Responsibility, nor Other Factors Causality are designated, classify it as No Attribution.

Examples: Billy was late to class.
Nikki doesn't know how to sound out words.
The children sorted the objects correctly and gave reasons for their choices.

Note: When the Student Teacher or a Significant Other makes a judgment or shares a feeling about the educational event but does not designate who/what is responsible for causing the event, classify it as No Attribution.

Examples: Today was a disaster.
I think the math activity worked.
I was pleased with the lesson.
Fantastic Film!
Mrs. Knott said the lesson was great.
The principal thought there was some confusion when the students broke into small groups.

Other Factors Causality: (-) These Comments are Explanatory Thoughts in which luck, ability of the students, effort of the students, difficulty of the task, effort of a Significant Other, or other non-Student Teacher effort factors are designated as being responsible for causing things in the educational event.

Examples: The lesson went poorly because the topic was uninteresting to the students. (Luck)
Harold couldn't sit still since he's hyperactive. (Innate ability of student)
It's Valentine's Day, so the students were excited. (Difficulty of the task)
The students raised their hands, so I had to answer their questions. (Effort of the students)
Since this was such a difficult concept, I'm not surprised that the students had difficulty grasping it. (Difficulty of task)
My Cooperating Teacher's comments settled the students down. (Effort of another)
When the principal entered the room, the students became silent. (Effort of another)
The activity went well because I have a "nack" for teaching. (Ability <u>not</u> Effort of Student Teacher)

Note: When a Comment designates teacher behaviors as causing things in the educational event but the teacher behavior is implied, it is classified as Other Factors Causality since the Student Teacher has not "owned" the responsibility.

Examples: During the Math drill, Mass questions were used to stimulate student participation.
The positive reinforcement kept the students on task.

Note: When precepts of good teaching are stated or quoted as causing things in the educational event since they are not "owned" by the Student Teacher, classify these Comments as Other Factors Causality.

Examples: Moving up and down the rows keeps the students' attention.
Mrs. White says calling students by name gets them to return to work.
A positive teacher attitude increases student motivation.

Note: When the relationship of an Explanatory Thought depends on Thought Units that exist in a preceding Comment, the classification of the second Comment as to Attribution may also depend upon the preceding Comment.

Examples: Patti's data revealed a high percentage of positive reinforcement. (No Attribution) Perhaps this encouraged student particiaption (Other Causal Factors)
Sally was talking a lot today. (No Attribution) This was because she has a big mouth. (Other Causal Factors)

Appendix D

Recommended PeeC Training Procedure

In this appendix will be found a six session procedure which could be used for training a group of participants: 1) to classify the written comments/lesson analysis of student teachers, and 2) to apply the information collected to their supervision of the particular student teachers.

Recommended PeeC Training Procedure
Session #1

Time: Three hours

20 minutes — Welcome participants to PeeC Training Sessions.

Get acquainted: Identify participants' names and current positions.

35 minutes — Compare the written comments of three student teachers.

Ask: 1. Which student teacher is the most mature professionally?

Ask: 2. What clues did you use to make you judgement?

Use Lesson Analysis from Student Teachers #30, 31, and 32.

Introduce purpose of PeeC Method.

20 minutes — Share PeeC Training Procedure with the participants:

1. present theoretical base,
2. provide definitions and examples,
3. practice on selected examples with feedback,
4. practice on actual transcripts with feedback from peers,
5. discuss uses in supervising,
6. practice application of PeeC Method using self-collected lesson analyses,
7. practice application of PeeC Method using role playing.

15 minutes — Overview four PeeC dimensions.

15 minutes — Break

10 minutes — Present the theoretical base for the Thought Units dimension.

15 minutes — Provide definitions and examples of comments with different number of Thought Units.

Use PeeC Dimensions and Category Definitions.

40 minutes — Practice, as a group, enumerating selected examples of comments with different numbers of Thought Units.

Use PeeC Practice Sheets #I

Give feedback to group as to corectness of their responses and help participants think through their errors.

Use PeeC Answer Sheets #I.

10 minutes — Close Training Session #1.

Recommended PeeC Training Procedure
Session #2

Time: Three hours

20 minutes	Review the Thought Unit dimension.
	Respond to participants' questions
30 minutes	Practice individually enumerating the Thought Units in selected examples of student teachers' written comments.
	Use PeeC Practice Sheets #II.
	Check and figure each participant's accuracy.
	Use PeeC Answer Sheets #II.
10 minutes	Break
10 minutes	Present the theoretical base of the Source dimension.
15 minuutes	Provide definitions and examples of comments with different Sources.
	Use PeeC Dimensions and Category Definitions.
35 minutes	Practice, as a group, classifying selected examples of Thought Units with different Sources.
	Use PeeC Practice Sheets #I.
	Give feedback to group as to correctness of their responses and help participants think through their errors.
	Use PeeC Answer Sheets #I.
10 minutes	Break
15 minutes	Practice individually classifying the Source(s) of selected comments with different numbers of Thought Units.
	Use PeeC Practice Sheets #II.
	Check and figure each participant's accuracy.
	Use PeeC Answer Sheets #II.
15 minutes	Practice individually enumerating the Thought Units and classifying the Source of Thought using actual lesson analyses of different student teachers.
15 minutes	Discuss the total number of Thought Units used in each student teacher's lesson analysis.

Discuss predominate Source(s) in each student teacher's lesson analysis.

Discuss differences among student teachers' lesson analyses.

Draw conclusions as to each Student Teacher's task maturity based on the total number of Thought Units reported and the Source categories that were represented in the Thought Units.

5 minutes — Close Training Session #2.

Recommended PeeC Training Procedure
Session #3

Time: Two and a half hours

20 minutes	Review the PeeC Thought Unit and Source dimensions.
	Respond to participants' questions.
10 minutes	Present the theoretical base for the Type of Thought dimension.
30 minutes	Provide definitions and examples of comments with different Types of Thought.
	Use PeeC Definitions and Category Definitions.
40 minutes	Practice, as a group, classifying selected examples of comments with different Types of Thought.
	Use PeeC Practice Sheets #I.
	Give feedback to group as to correctness of their responses and help participants think through their errors.
	Use PeeC Answer Sheets #I.
15 minutes	Break
30 minutes	Practice individually classifying the Type of Thought of selected comments.
	Use PeeC Practice Sheets #II.
	Check and figure each participant's accuracy.
	Use PeeC Answer Sheets #II.
5 minutes	Close Training Session #3

Recommended PeeC Training Procedure
Session #4

Time: Three hours

20 minutes	Review the PeeC Thought Units, Source, and Type of Thought dimension.
	Response to participants' questions.
10 minutes	Present theoretical base for the Attribution dimension.
30 minutes	Provide definitions and examples of comments with different Attributions.
	Use PeeC Definitions and Category Definitions.
40 minutes	Practice, as a group, classifying selected examples of comments with different Attributions.
	Use PeeC Practice Sheets #I.
	Give Feedback to group as to correctness of their responses and help participants think throught their errors.
	Use PeeC Answer Sheets #I.
15 minutes	Break
30 minutes	Practice individually classifying the Attributions of selected comments.
	Use PeeC Practice Sheets #II.
	Check and figure each participant's accuracy.
	Use PeeC Answer Sheets #II.
15 minutes	Practice individually classifying the Type of Thought and Attribution using written comments from lesson analyses of different student teachers.
15 minutes	Discuss the predominate Type of Thought used in each student teacher's lesson analysis.
	Discuss the predominate Attributions used in each student teacher's lesson analysis.
	Discuss differences among student teachers' lesson analyses.
	Draw conclusions as to each student teacher's task maturity based on the Type of Thought and Attributions they used.
5 minutes	Close Training Session #4.

Recommended PeeC Training Procedure #5

Time: Three hours

20 minutes	Review four PeeC dimensions.
	Respond to participants' questions.
10 minutes	Present Comment Status.
15 minutes	Provide definitions and examples of comments with differing Status.
	Use PeeC Definitions and Category Definitions
20 minutes	Practice, as a group, classifying selected examples of Classified and Unclassified Comments.
	Use PeeC Practice Sheets #I.
	Give feedback to group as to correctness of their responses and help partipants think through their errors.
	Use PeeC Answer Sheets #I.
15 minutes	Practice individually classifying the Comment Status of selected comments.
	Use PeeC Practice Sheets #II.
	Check and figure each participant's accuracy.
	Use PeeC Answer Sheets #II.
15 minutes	Break
30 minutes	Use PeeC Method to collect data from the original three student teachers' lesson analyses in terms of the four PeeC dimensions and Comment Status.
	Use Lesson Analyses from Student Teachers #30, #31, and #32.
15 minutes	As a group, summarize what is known about student teachers #30, #31, and #32.
30 minutes	Discuss supervisory goals and questions to use, with student teachers #30, #31, and #32 (when discussing with the student teacher their analysis of their lesson).
10 minutes	*Ask participants to collect and classify several written lesson analyses before the next optional training session.
	Close Training Session #5.

Recommended PeeC Training Procedure
Session #6
(Optional)

Time: Three hours

20 minutes	Review the PeeC Thought Units, Source, Type of Thought, and Attribution dimensions, plus Comment Status.
30 minutes	Discuss what participants learned from the written lesson analyses which they collected.
60 minutes	Divide participants into groups of three. One participant will take the role of student teacher, one the role of supervisor, and one will be an observer. Give the participant (acting as the student teacher) a written lesson analysis to follow. (Use one of the lesson analyses which were brought in by the participants.) Give the participant (acting as the supervisor) instructions to question the student teacher about their lesson. Ask the supervisor to focus on (1) increasing the number of Thought Units recalled, (2) increasing recall of Teacher and Pupil Source Thought Units, (3) increasing the number of Explanatory Thoughts, and (4) increasing the number of Student Teacher Effort Attributions that are made. Give the participant (acting as the observer) a copy of the student teacher's lesson analysis and the instructions to collect verbatum data on the questions the supervisors use and the responses that their questions generate. Switch roles every 20 minutes so that each participant experiences each role.
15 minute	Break
45 minutes	Discuss what participants in the role of as student teacher noticed. Discuss what participants in the role of supervisors noticed. Discuss what partipants in the role of observers noticed.
10 minutes	*Ask participants to use the PeeC Method in some manner in their next supervisory conference. Close Training Session #6.

APPENDIX E

PeeC Practice Sheets and Answer Sheets

Practice Sheet #I: COMMENT STATUS

_____ 1. We began a letter writing unit.

_____ 2. My car ran out of gas on the way to work forcing me to be late.

_____ 3. The students were excited today.

_____ 4. I gave a lot of positive reinforcement to Todd and a lot of negative reinforcement to Ralph.

_____ 5. What should I do when Maria starts crying?

_____ 6. I didn't get much sleep last night.

_____ 7. In the future, I'll word my directions clearly.

_____ 8. The principal stopped by and asked how the lesson went.

_____ 9. When Mass questions are used, the noise level in the room rises.

_____ 10. Alma asked me several questions that helped me think about my lesson.

_____ 11. Why is it so difficult to give clear directions?

_____ 12. My cooperating teacher suggested that I need to notice which students are not listening.

_____ 13. My cooperating teacher watched the lesson.

_____ 14. I told my partner what had happened the night before and that I had the examples for my lesson ready, but that I had not thought out the questions that I was going to use.

Practice Sheet #I: THOUGHT UNITS

_____ 1. The students were great today.

_____ 2. The room was stuffy.

_____ 3. The students ran on the way to lunch and talked on the way to the bathroom.

_____ 4. I made a Class rule, explained it to the students, and disciplined based on the rule.

_____ 5. The cooperating teacher said, "You should write clearly."

_____ 6. During the second half of the lesson, the students were on task.

_____ 7. There were ten opportunities to reinforce in my lesson.

_____ 8. Todd attended when he got to answer a question and when he helped the teacher.

_____ 9. I used Control questions to keep the class in order.

_____ 10. When I positively reinforce Sarah's ideas, she starts talking more.

_____ 11. The lesson went well and I was satisfied.

_____ 12. I positively reinforced Alex's behavior four times and gave corrective feedback to him twice.

_____ 13. Twenty-five out of twenty-seven students learned to spell the days of the week.

_____ 14. I used lots of reinforcement today.

_____ 15. Positive reinforcement and time-out were used to manage the students.

_____ 16. I asked more divergent questions than convergent ones.

_____ 17. Alice, Josy, and Marilyn were having difficulty with their handwriting.

_____ 18. The children were able to sort the glass and the metal, but not the plastic.

_____ 19. We needed a filmstrip on the Metric System and one on Fractions.

_____ 20. Van and Amber stacked the blocks and then knocked them down.

Practice Sheet #I: SOURCE

_____ 1. I did a terrible job today.

_____ 2. Jose's guess was "48".

_____ 3. The activity lasted for only twenty minutes

_____ 4. I waited ten seconds on Maria.

_____ 5. Mrs. Smith reminded me to involve as many students as possible.

_____ 6. A high noise level bothers me.

_____ 7. The room felt cold today.

_____ 8. The students seemed bored with the activity.

_____ 9. I used negative reinforcement on two students.

_____ 10. Nouns was the concept.

_____ 11. Amy heard only recall questions being asked during the Science lesson.

_____ 12. Jo Ann cried all afternoon.

_____ 13. My directions were not clear.

_____ 14. Henry wrote a creative story.

_____ 15. All of us enjoyed the lesson.

_____ 16. The Concept Attainment method was used.

_____ 17. The Turtle group finally learned to count.

_____ 18. My supervisor noted the lack of manipulatives for each child.

_____ 19. A tape on the metric system is needed.

_____ 20. We needed to have more time for the activity.

_____ 21. Kelly and Mathew picked up the trash.

_____ 22. The students demonstrated their measurement device and then correctly measured their objects.

_____ 23. My cooperating teacher noted that students were talking a lot today.

_____ 24. My questions seemed to be at the higher cognitive levels, but my wait time was short.

_____ 25. We waited until the whole class was attending.

_____ 26. Cathy was concerned about how I distributed my questions only to the students in the front row.

_____ 27. When the temperature in the room rose, I became frustrated.

_____ 28. Lis recorded that thirty questions were asked.

_____ 29. After I named the properties of the objects, the students sorted them.

_____ 30. The principal suggested that I must be consistent in my discipline.

_____ 31. I positively reinforced students' good behavior and corrected their wrong answers as each student responded.

_____ 32. I used Solitary, Controlled, and Voluntary Questions in my lesson.

Practice Sheet #I: TYPE OF THOUGHT

_____ 1. The students raised their hands.

_____ 2. I stood by the blackboard and presented the lesson.

_____ 3. Since I gave lots of positive reinforcement, I didn't have to give as many negative reinforcements.

_____ 4. I would like to use more Spontaneous questions.

_____ 5. If I ignore Heather's crying, it gets worse.

_____ 6. Both Kelly and Tim should be in another reading group.

_____ 7. When Sarah comes to school all dressed up, she acts better.

_____ 8. I noticed the boy on the back row was talking and I saw that Sarah was out of her seat twice during the lesson.

_____ 9. During the Spelling Test, Controlled questions were used.

_____ 10. The students were able to follow along in their own books because I read slowly.

_____ 11. The seating arrangement affects the distribution of teacher comments.

_____ 12. I did something new and the students were excited.

_____ 13. I used Solitary questions to keep the class in order.

_____ 14. Either the lesson was too difficult or my students were not trying today.

_____ 15. I would like to use a longer wait time so that the students have plenty of time to create new ideas.

_____ 16. Although I gave clear directions, the students could not complete the art project.

_____ 17. One time I reinforced a wrong answer; another time I criticized a correct answer.

_____ 18. In the future, I would like to ease into more Voluntary and Spontaneous questions.

_____ 19. Reinforcement will encourage the students to make comments.

_____ 20. In this low class, a positive teacher attitude makes the students work harder.

_____ 21. The film on fractions was too short and very complex.

_____ 22. Given a new topic, I would like to use more Spontaneous questions, since it will give the students time to think.

_____ 23. My mood affects the students' mood.

_____ 24. Zoe was working quietly at his desk, but Sam was playing in the corner.

_____ 25. Only half the class knows the answer. Maybe the teacher needs to bring the lesson down to the student's level of thinking by using concrete examples.

_____ 26. I ask more questions of low achievers than I do of high achievers. The students' pattern of volunteering is just opposite of this.

_____ 27. I gave individual instructions to some students. This kept the other students from being bored with extra instruction.

_____ 28. My cooperating teacher asked me where I stood. This made me realize that I had not asked the students on my right any questions.

Practice Sheet #I: ATTRIBUTION

_____ 1. The lesson went well because I did a lot of planning.

_____ 2. The lesson went well because this is a good group of kids.

_____ 3. When I asked Tom a question, he responded by participating more in the group.

_____ 4. The room was messy.

_____ 5. I plan to seat the children so that their noise will not bother the other classes.

_____ 6. Billy was late to class.

_____ 7. The lesson went poorly because the topic was uninteresting to the students.

_____ 8. Next time I will not get thrown off the track when a student waves his arms.

_____ 9. Because I did not work individually with the slow students, the other students got bored.

_____ 10. I used a lot of different examples.

_____ 11. I forgot to reinforce students' good ideas.

_____ 12. "Okay" was said 35 times in the lesson.

_____ 13. We should have found a film on the Metric System.

_____ 14. Moving up and down the rows keeps the students' attention.

_____ 15. It's Valentine's Day, so the students were excited.

_____ 16. Nikki doesn't know how to sound out words.

_____ 17. I corrected problem behavior by walking over and standing by those students.

_____ 18. During the Math drill, Mass questions were used to stimulate student participation.

_____ 19. I missed 34 opportunities to reinforce students in this lesson.

_____ 20. Mass questions were frequent.

_____ 21. The students raised their hands, so I had to answer their questions.

_____ 22. Sarah and I called students by name so that they would pay attention.

_____ 23. I called roll and the students worked on their homework.

_____ 24. Next time, I will stick with Solitary and Control questions with this class.

_____ 25. Since this was such a difficult concept, I'm not surprised that the students had difficulty grasping it.

_____ 26. We worked hard to teach the concept: Democracy.

_____ 27. My calling off task students by name helped them return to work.

_____ 28. Behavior management is a problem.

_____ 29. My lesson was well planned but my management needs work.

_____ 30. I should have noticed the boy behind me.

_____ 31. Mrs. Knott said the lesson was a disaster.

_____ 32. Mrs. White says calling students by name gets them to return to work.

_____ 33. There was a high level of reinforcement in this lesson.

_____ 34. In the future, I will manage the class better.

_____ 35. The students and I worked hard to make the day go well.

_____ 36. The cooperating teacher's comments settled the students.

_____ 37. I think the math activity worked.

_____ 38. Harold couldn't sit still. This is because he's hyperactive.

Answer Sheet #I: COMMENT STATUS

C 1. We began a letter writing unit.

U 2. My car ran out of gas on the way to work forcing me to be late.

C 3. The students were excited today.

C 4. I gave a lot of positive reinforcement to Todd and a lot of negative reinforcement to Ralph.

U 5. What should I do when Maria starts crying?

U 6. I didn't get much sleep last night.

C 7. In the future, I'll word my directions clearly.

U 8. The principal stopped by and asked how the lesson went.

C 9. When Mass questions are used, the noise level in the room rises.

U 10. Alma asked me several questions that helped me think about my lesson.

U 11. Why is it so difficult to give clear directions?

C 12. My cooperating teacher suggested that I need to notice which students are not listening.

U 13. My cooperating teacher watched the lesson.

U/C 14. I told my partner what had happened the night before and that I had the examples for my lesson ready, but that I had not thought out the questions that I was going to use.

Answer Sheet #I: THOUGHT UNITS

1	1.	The students were great today.
1	2.	The room was stuffy.
2	3.	The students ran on the way to lunch and talked on the way to the bathroom.
3	4.	I made a Class rule, explained it to the students, and disciplined based on the rule.
2	5.	The cooperating teacher said, "You should write clearly."
1	6.	During the second half of the lesson, the students were on task.
1	7.	There were ten opportunities to reinforce in my lesson.
3	8.	Todd attended when he got to answer a question and when he helped the teacher.
1	9.	I used Control questions to keep the class in order.
2	10.	When I positively reinforce Sarah's ideas, she starts talking more.
2	11.	The lesson went well and I was satisfied.
2	12.	I positively reinforced Alex's behavior four times and gave corrective feedback to him twice.
1	13.	Twenty-five out of twenty-seven students learned to spell the days of the week.
1	14.	I used lots of reinforcement today.
2	15.	Positive reinforcement and time-out were used to manage the students.
2	16.	I asked more divergent questions than convergent ones.
3	17.	Alice, Josy, and Marilyn were having difficulty with their handwriting.
3	18.	The children were able to sort the glass and the metal, but not the plastic.
2	19.	We needed a filmstrip on the Metric System and one on Fractions.
4	20.	Van and Amber stacked the blocks and then knocked them down.

Answer Sheet #I: SOURCE

T	1.	I did a terrible job today.
P	2.	Jose's guess was "48".
O	3.	The activity lasted for only twenty minutes
T	4.	I waited ten seconds on Maria.
SO	5.	Mrs. Smith reminded me to involve as many students as possible.
O	6.	A high noise level bothers me.
O	7.	The room felt cold today.
P	8.	The students seemed bored with the activity.
T	9.	I used negative reinforcement on two students.
O	10.	Nouns was the concept.
SO	11.	Amy heard only recall questions being asked during the Science lesson.
P	12.	Jo Ann cried all afternoon.
T	13.	My directions were not clear.
P	14.	Henry wrote a creative story.
T	15.	All of us enjoyed the lesson.
O	16.	The Concept Attainment method was used.
P	17.	The Turtle group finally learned to count.
SO	18.	My supervisor noted the lack of manipulatives for each child.
O	19.	A tape on the metric system is needed.
T	20.	We needed to have more time for the activity.
P/P	21.	Kelly and Mathew picked up the trash.
P/P	22.	The students demonstrated their measurement device and then correctly measured their objects.
SO/P	23.	My cooperating teacher noted that students were talking a lot today.

T/T 24. My questions seemed to be at the higher cognitive levels, but my wait time was short.

T/P 25. We waited until the whole class was attending.

SO/T 26. Cathy was concerned about how I distributed my questions only to the students in the front row.

O/T 27. When the temperature in the room rose, I became frustrated.

SO/T 28. Lis recorded that thirty questions were asked.

T/P 29. After I named the properties of the objects, the students sorted them.

SO/T 30. The principal suggested that I must be consistent in my discipline.

T/T/P 31. I positively reinforced students' good behavior and corrected their wrong answers as each student responded.

T/T/T 32. I used Solitary, Controlled, and Voluntary Questions in my lesson.

Answer Sheet #I: TYPE OF THOUGHT

D	1.	The students raised their hands.
D	2.	I stood by the blackboard and presented the lesson.
E	3.	Since I gave lots of positive reinforcement, I didn't have to give as many negative reinforcements.
D	4.	I would like to use more Spontaneous questions.
E	5.	If I ignore Heather's crying, it gets worse.
D	6.	Both Kelly and Tim should be in another reading group.
E	7.	When Sarah comes to school all dressed up, she acts better.
D	8.	I noticed the boy on the back row was talking and I saw that Sarah was out of her seat twice during the lesson.
D	9.	During the Spelling Test, Controlled questions were used.
E	10.	The students were able to follow along in their own books because I read slowly.
E	11.	The seating arrangement affects the distribution of teacher comments.
D	12.	I did something new and the students were excited.
E	13.	I used Solitary questions to keep the class in order.
D	14.	Either the lesson was too difficult or my students were not trying today.
E	15.	I would like to use a longer wait time so that the students have plenty of time to create new ideas.
E	16.	Although I gave clear directions, the students could not complete the art project.
D	17.	One time I reinforced a wrong answer; another time I criticized a correct answer.
D	18.	In the future, I would like to ease into more Voluntary and Spontaneous questions.
E	19.	Reinforcement will encourage the students to make comments.
E	20.	In this low class, a positive teacher attitude makes the students work harder.

D 21. The film on fractions was too short and very complex.

E 22. Given a new topic, I would like to use more Spontaneous questions, since it will give the students time to think.

E 23. My mood affects the students' mood.

D 24. Zoe was working quietly at his desk, but Sam was playing in the corner.

D/E 25. Only half the class knows the answer. Maybe the teacher needs to bring the lesson down to the student's level of thinking by using concrete examples.

E/E 26. I ask more questions of low achievers than I do of high achievers. The students' pattern of volunteering is just opposite of this.

D/E 27. I gave individual instructions to some students. This kept the other students from being bored with extra instruction.

D/E 28. My cooperating teacher asked me where I stood. This made me realize that I had not asked the students on my right any questions.

Answer Sheet #I: ATTRIBUTION

++	1.	The lesson went well because I did a lot of planning.
-	2.	The lesson went well because this is a good group of kids.
++	3.	When I asked Tom a question, he responded by participating more in the group.
0	4.	The room was messy.
++	5.	I plan to seat the children so that their noise will not bother the other classes.
0	6.	Billy was late to class.
-	7.	The lesson went poorly because the topic was uninteresting to the students.
+	8.	Next time I will not get thrown off the track when a student waves his arms.
++	9.	Because I did not work individually with the slow students, the other students got bored.
-	10.	I used a lot of different examples.
+	11.	I forgot to reinforce students' good ideas.
0	12.	"Okay" was said 35 times in the lesson.
+	13.	We should have found a film on the Metric System.
-	14.	Moving up and down the rows keeps the students' attention.
-	15.	It's Valentine's Day, so the students were excited.
0	16.	Nikki doesn't know how to sound out words.
++	17.	I corrected problem behavior by walking over and standing by those students.
-	18.	During the Math drill, Mass questions were used to stimulate student participation.
+	19.	I missed 34 opportunities to reinforce students in this lesson.
0	20.	Mass questions were frequent.
-	21.	The students raised their hands, so I had to answer their questions.

++	22.	Sarah and I called students by name so that they would pay attention.
+	23.	I called roll and the students worked on their homework.
+	24.	Next time, I will stick with Solitary and Control questions with this class.
-	25.	Since this was such a difficult concept, I'm not surprised that the students had difficulty grasping it.
+	26.	We worked hard to teach the concept: Democracy.
++	27.	My calling off task students by name helped them return to work.
0	28.	Behavior management is a problem.
+	29.	My lesson was well planned but my management needs work.
+	30.	I should have noticed the boy behind me.
0	31.	Mrs. Knott said the lesson was a disaster.
-	32.	Mrs. White says calling students by name gets them to return to work.
0	33.	There was a high level of reinforcement in this lesson.
+	34.	In the future, I will manage the class better.
++	35.	The students and I worked hard to make the day go well.
-	36.	The cooperating teacher's comments settled the students.
0	37.	I think the math activity worked.
+	38.	Harold couldn't sit still. This is because he's hyperactive.

Practice Sheet #II: COMMENT STATUS

_____ 1. Today we started a unit on Fractions.

_____ 2. I was running late this morning because my child was ill.

_____ 3. The children were very active today.

_____ 4. I work a lot with Tim because he couldn't read the words and ignored Janie because she didn't need my help.

_____ 5. What should I do when the new boy shouts out the answers?

_____ 6. I didn't get much rest last night.

_____ 7. In the future, I'll listen to the students' responses.

_____ 8. My supervisor stopped by and asked how the lesson went.

_____ 9. When students are reinforced for good behavior, they work harder.

_____ 10. Frank asked me several questions that helped me think about my lesson.

_____ 11. Why is it so hard to explain some ideas?

_____ 12. My cooperating teacher suggested that I should watch the students on the back row.

_____ 13. The principal saw my lesson.

_____ 14. I shared with my team member what had happened over the weekend and that I did not have time to plan out the directions for my art lesson.

Practice Sheet #II: THOUGHT UNITS

_____ 1. The students were excited today.

_____ 2. The classroom seemed cold.

_____ 3. The students talked all morning and did not do any of their work.

_____ 4. I explained about tornadoes, demonstrated the way to sit, and then took the class to the safety area.

_____ 5. The cooperating teacher told me, "Keep your eye on John."

_____ 6. At the beginning of the lesson, the students were attentive.

_____ 7. There were two opportunities to use time-out with Joe in this lesson.

_____ 8. Gary worked when he got to help the teacher and when he used the "magic pen".

_____ 9. I used firm directions to keep the class in order.

_____ 10. When I positively reinforce Keith's behavior, he acts better.

_____ 11. The lesson was great and I felt pleased.

_____ 12. I positively reinforced SoNu's ideas three times and corrected her twice.

_____ 13. Ten out of twenty students learned their times tables.

_____ 14. I used a lot of divergent questions today.

_____ 15. Concept Attainment and Brainstorming were used to stimulate the students' thinking.

_____ 16. I used more positive reinforcement than negative.

_____ 17. Jamie, Carey, and Ann were not able to spell the word: anteater.

_____ 18. The students were able to do the "times 4" and "times 5" but not the "times 6" facts.

_____ 19. The reading group needed to practice finding the main idea and drawing conclusions.

_____ 20. Carol and Fred read their SRA's and then worked with the flashcards.

Practice Sheet #II: SOURCE

_____ 1. I did great today.

_____ 2. Uriah's response was "Oklahoma".

_____ 3. The lesson lasted at least one hour.

_____ 4. A film strip on the Ecology is needed.

_____ 5. Mrs. Jacob reminded me to reinforce good behavior frequently.

_____ 6. A high noise level bothers me.

_____ 7. The room was messy.

_____ 8. The students appeared interested in the movie.

_____ 9. I used time-out on two students.

_____ 10. Circle was the concept.

_____ 11. Amy heard only recall questions being asked during the Science lesson.

_____ 12. Han was in three fights this afternoon.

_____ 13. My questions were not clearly worded.

_____ 14. Rachael drew a beautiful picture.

_____ 15. All of us enjoyed the lesson.

_____ 16. The Synectics method was used.

_____ 17. The E.T. group learned to use the computer.

_____ 18. My supervisor noted the lack of desk space for each child.

_____ 19. Grace and Edna sharpened their pencils.

_____ 20. We needed to have more time for this lesson.

_____ 21. I waited 30 minutes on John to finish his work.

_____ 22. The students completed their worksheets and then went to the listening center.

_____ 23. My cooperating teacher noted that students were off task a lot today.

_____ 24. My directions seemed to be clear, but my questions were poor.

_____ 25. We waited until all the student's eyes were on us.

_____ 26. Jo Ann was concerned about how I reinforced the students in the front row.

_____ 27. As the temperature rose, I became increasingly sharp with the students.

_____ 28. Melanie recorded that "Okay" was said three times.

_____ 29. After I introduced the fraction bars, the students used them to solve the problems on the page 59.

_____ 30. The principal suggested that I should speak a little louder.

_____ 31. I positively reinforced student's good ideas and corrected their wrong answers as each student responded.

_____ 32. I used positive reinforcement, negative reinforcement, and ignoring in my lesson.

Practice Sheet #II: TYPE OF THOUGHT

_____ 1. The children ran back to their desks.

_____ 2. I stood at the back of the room and called students by name.

_____ 3. Since I used Control questions, I didn't have to use as much negative reinforcement.

_____ 4. Amy and Martha should be in another Math group.

_____ 5. If I ignore Ralph's outbursts, they get worse.

_____ 6. I would like to use a longer wait time.

_____ 7. When Jose has breakfast, he works better.

_____ 8. I noticed Sharon was talking and I heard Zaich cleaning out his desk.

_____ 9. During the Social Studies Lesson, Spontaneous questions were frequently used.

_____ 10. The students were able to contruct the weather graph, because I demonstrated how to do it.

_____ 11. The seating arrangement affects student participation.

_____ 12. I varied our schedule and the students seemed hyper.

_____ 13. I used positive reinforcement to keep the students on task.

_____ 14. Either the lesson was too easy or my students are very bright.

_____ 15. I would like to use more Spontaneous questions so that the students have plenty of time to think.

_____ 16. Although I gave an excellent description of map drawing, the students could not create their own maps.

_____ 17. One time I called on Tim, who knew the answer; another time I called on Sam, who didn't know the answer.

_____ 18. In the future, I would like to use the blackboard more frequently.

_____ 19. Questioning will encourage the students to participate.

_____ 20. With a low group, a positive teacher attitude help the kids stay on task.

_____ 21. The movie on Nutrition was long and very complex.

_____ 22. Given another abstract topic, I would like to use more concrete examples, since it would help the students understand.

_____ 23. My disposition affects the students' behavior.

_____ 24. Jane was working quietly at her desk, but Sam was goofing off in the back of the room.

_____ 25. I gave individual attention to those who finished early. This kept them learning.

_____ 26. My cooperating teacher asked me which students I called on. This made me realize that I had not asked the students immediately in front of me any questions.

_____ 27. I give more reinforcement to low achievers that I do to high achievers. The student's pattern of participating is just opposite of this.

_____ 28. All of the students learned the concept. Maybe increasing the difficulty of my lessons according to the students' ability level would help.

Practice Sheet #II: ATTRIBUTION

_____ 1. The Math activity turned out great because I did a lot of planning.

_____ 2. The classroom was cluttered with books and paper.

_____ 3. When I reinforced Sarah, she responded more.

_____ 4. Spelling went smoothly because the students are really bright.

_____ 5. I plan to rearrange the students' desks so that they will not bother each other.

_____ 6. Sally didn't have a pencil or any paper.

_____ 7. The Science Unit on plants was lousy because the topic was uninteresting to the students.

_____ 8. Next time I will not lose my train of thought when a student interrupts me.

_____ 9. Because I did not assign special work to the Special Education students, they had difficulty completing the class assignment.

_____ 10. There were a lot of directions given.

_____ 11. I forgot to call students' by name.

_____ 12. My subject was well planned but my classroom control needs work.

_____ 13. We should have gotten a filmstrip to show.

_____ 14. Moving around the room keeps the kids' on task.

_____ 15. It's Halloween, so the students were really excited.

_____ 16. Edna doesn't know how to carry in addition.

_____ 17. I corrected students' work by underlining the letters of each word which were correct and by writing the correct letters above the incorrect ones.

_____ 18. During the drill, Spontaneous questions were used to stimulate student participation.

_____ 19. I missed three opportunities to remind the students of the class rules.

_____ 20. Negative reinforcement was frequent.

_____ 21. The students asked questions, so I couldn't help running out of time.

_____ 22. Mrs. Annot says learning the students' names helps establish rapport.

_____ 23. I should have noticed the uneven student participation.

_____ 24. Next time, I will stick with my lesson plans.

_____ 25. Since this was such an abstract concept, I was not surprised that the children had difficulty reaching my objective.

_____ 26. We worked hard preparing the students for the field trip.

_____ 27. My pre-cutting all the construction paper helped on time management.

_____ 28. Testing a large group of children is a problem.

_____ 29. "Sh" was said 60 times in the lesson.

_____ 30. Ralph can't stop talking. That's because he's hyperactive.

_____ 31. My supervisor indicated that the Spelling drill was poor.

_____ 32. Jamie and I lead the discussion on Current Events.

_____ 33. I gave directions and the students listened.

_____ 34. I thought today was great.

_____ 35. The students and I worked hard to created the puppet show.

_____ 36. The cooperating teacher's comments got the students' attention.

Answer Sheet #II: COMMENT STATUS

C 1. Today we started a unit on Fractions.

U 2. I was running late this morning because my child was ill.

C 3. The children were very active today.

C 4. I work a lot with Tim because he couldn't read the words and ignored Janie because she didn't need my help.

U 5. What should I do when the new boy shouts out the answers?

U 6. I didn't get much rest last night.

C 7. In the future, I'll listen to the students' responses.

U 8. My supervisor stopped by and asked how the lesson went.

C 9. When students are reinforced for good behavior, they work harder.

U 10. Frank asked me several questions that helped me think about my lesson.

U 11. Why is it so hard to explain some ideas?

C 12. My cooperating teacher suggested that I should watch the students on the back row.

U 13. The principal saw my lesson.

U/C 14. I shared with my team member what had happened over the weekend and that I did not have time to plan out the directions for my art lesson.

Answer Sheet #II: THOUGHT UNITS

1	1.	The students were excited today.
1	2.	The classroom seemed cold.
2	3.	The students talked all morning and did not do any of their work.
3	4.	I explained about tornadoes, demonstrated the way to sit, and then took the class to the safety area.
2	5.	The cooperating teacher told me, "Keep your eye on John."
1	6.	At the beginning of the lesson, the students were attentive.
1	7.	There were two opportunities to use time-out with Joe in this lesson.
3	8.	Gary worked when he got to help the teacher and when he used the "magic pen".
1	9.	I used firm directions to keep the class in order.
2	10.	When I positively reinforce Keith's behavior, he acts better.
2	11.	The lesson was great and I felt pleased.
2	12.	I positively reinforced SoNu's ideas three times and corrected her twice.
1	13.	Ten out of twenty students learned their times tables.
1	14.	I used a lot of divergent questions today.
2	15.	Concept Attainment and Brainstorming were used to stimulate the students' thinking.
2	16.	I used more positive reinforcement than negative.
3	17.	Jamie, Carey, and Ann were not able to spell the word: ant-eater.
3	18.	The students were able to do the "times 4" and "times 5" but not the "times 6" facts.
2	19.	The reading group needed to practice finding the main idea and drawing conclusions.
4	20.	Carol and Fred read their SRA's and then worked with the flashcards.

Answer Sheet #II: SOURCE

T 1. I did great today.

P 2. Uriah's response was "Oklahoma".

O 3. The lesson lasted at least one hour.

O 4. A film strip on the Ecology is needed.

SO 5. Mrs. Jacob reminded me to reinforce good behavior frequently.

O 6. A high noise level bothers me.

O 7. The room was messy.

P 8. The students appeared interested in the movie.

T 9. I used time-out on two students.

O 10. Circle was the concept.

SO 11. Amy heard only recall questions being asked during the Science lesson.

P 12. Han was in three fights this afternoon.

T 13. My questions were not clearly worded.

P 14. Rachael drew a beautiful picture.

T 15. All of us enjoyed the lesson.

O 16. The Synectics method was used.

P 17. The E.T. group learned to use the computer.

SO 18. My supervisor noted the lack of desk space for each child.

P/P 19. Grace and Edna sharpened their pencils.

T 20. We needed to have more time for this lesson.

T 21. I waited 30 minutes on John to finish his work.

P/P 22. The students completed their worksheets and then went to the listening center.

SO/P 23. My cooperating teacher noted that students were off task a lot today.

T/T 24. My directions seemed to be clear, but my questions were poor.

T/P 25. We waited until the whole class was attending.

SO/T 26. Cathy was concerned about how I distributed my questions only to the students in the front row.

O/T 27. When the temperature in the room rose, I became frustrated.

SO/T 28. Lis recorded that thirty questions were asked.

T/P 29. After I named the properties of the objects, the students sorted them.

SO/T 30. The principal suggested that I must be consistent in my discipline.

T/T/P 31. I positively reinforced students' good behavior and corrected their wrong answers as each student responded.

T/T/T 32. I used Solitary, Controlled, and Voluntary Questions in my lesson.

Answer Sheet #II: TYPE OF THOUGHT

D 1. The children ran back to their desks.

D 2. I stood at the back of the room and called students by name.

E 3. Since I used Control questions, I didn't have to use as much negative reinforcement.

D 4. Amy and Martha should be in another Math group.

E 5. If I ignore Ralph's outbursts, they get worse.

D 6. I would like to use a longer wait time.

E 7. When Jose has breakfast, he works better.

D 8. I noticed Sharon was talking and I heard Zaich cleaning out his desk.

D 9. During the Social Studies Lesson, Spontaneous questions were frequently used.

E 10. The students were able to contruct the weather graph, because I demonstrated how to do it.

E 11. The seating arrangement affects student participation.

D 12. I varied our schedule and the students seemed hyper.

E 13. I used positive reinforcement to keep the students on task.

D 14. Either the lesson was too easy or my students are very bright.

E 15. I would like to use more Spontaneous questions so that the students have plenty of time to think.

E 16. Although I gave an excellent description of map drawing, the students could not create their own maps.

D 17. One time I called on Tim, who knew the answer; another time I called on Sam, who didn't know the answer.

D 18. In the future, I would like to use the blackboard more frequently.

E 19. Questioning will encourage the students to participate.

E 20. With a low group, a positive teacher attitude help the kids stay on task.

D 21. The movie on Nutrition was long and very complex.

E 22. Given another abstract topic, I would like to use more concrete examples, since it would help the students understand.

E 23. My disposition affects the students' behavior.

D 24. Jane was working quietly at her desk, but Sam was goofing off in the back of the room.

E/E 25. I gave individual attention to those who finished early. This kept them learning.

D/E 26. My cooperating teacher asked me which students I called on. This made me realize that I had not asked the students immediately in front of me any questions.

E/E 27. I give more reinforcement to low achievers that I do to high achievers. The student's pattern of participating is just opposite of this.

D/E 28. All of the students learned the concept. Maybe increasing the difficulty of my lessons according to the students' ability level would help.

Answer Sheet #II: ATTRIBUTION

++	1.	The Math activity turned out great because I did a lot of planning.
Ø	2.	The classroom was cluttered with books and paper.
++	3.	When I reinforced Sarah, she responded more.
-	4.	Spelling went smoothly because the students are really bright.
++	5.	I plan to rearrange the students' desks so that they will not bother each other.
Ø	6.	Sally didn't have a pencil or any paper.
-	7.	The Science Unit on plants was lousy because the topic was uninteresting to the students.
++	8.	Next time I will not lose my train of thought when a student interrupts me.
++	9.	Because I did not assign special work to the Special Education students, they had difficulty completing the class assignment.
-	10.	There were a lot of directions given.
+	11.	I forgot to call students' by name.
+	12.	My subject was well planned but my classroom control needs work.
+	13.	We should have gotten a filmstrip to show.
-	14.	Moving around the room keeps the kids' on task.
-	15.	It's Halloween, so the students were really excited.
Ø	16.	Edna doesn't know how to carry in addition.
+	17.	I corrected students' work by underlining the letters of each word which were correct and by writing the correct letters above the incorrect ones.
-	18.	During the drill, Spontaneous questions were used to stimulate student participation.
+	19.	I missed three opportunities to remind the students of the class rules.
Ø	20.	Negative reinforcement was frequent.

___-___ 21. The students asked questions, so I couldn't help running out of time.

___-___ 22. Mrs. Annot says learning the students' names helps establish rapport.

___+___ 23. I should have noticed the uneven student participation.

___+___ 24. Next time, I will stick with my lesson plans.

___-___ 25. Since this was such an abstract concept, I was not surprised that the children had difficulty reaching my objective.

___+___ 26. We worked hard preparing the students for the field trip.

___++___ 27. My pre-cutting all the construction paper helped on time management.

___Ø___ 28. Testing a large group of children is a problem.

___Ø___ 29. "Sh" was said 60 times in the lesson.

___Ø/-___ 30. Ralph can't stop talking. That's because he's hyperactive.

___Ø___ 31. My supervisor indicated that the Spelling drill was poor.

___+___ 32. Jamie and I lead the discussion on Current Events.

___+___ 33. I gave directions and the students listened.

___Ø___ 34. I thought today was great.

___+___ 35. The students and I worked hard to created the puppet show.

___-___ 36. The cooperating teacher's comments got the students' attention.

APPENDIX F

Examples of Four Raters Use of the PeeC Method

In this appendix will be found the written lesson analyses for Student Teachers #30, #31, and #32 which have been classified and interpreted. These student teachers' lesson analyses were chosen because their written comments appeared to reflect differing cognitive processing and conceptual schematas. Student Teachers #30, #31, and #32's lesson analyses have been independently classified by three raters and by the investigator of this study.

Raters were asked: 1) to classify each Student Teacher's lesson analysis using the PeeC dimension categories, 2) interpret the results, and 3) to report how this information would affect their supervision of the student teacher.

First, the classifications and interpretation of Student Teacher #30's lesson analysis will be presented by Rater #1, Rater #2, Rater #3, and Rater #4. Following this will be the classifications and interpretations of Student Teacher #31's lesson analysis by Rater #1, Rater #2, Rater #3, and Rater #4. Finally the classifications and interpretations of Student Teacher #32's lesson analysis by all four raters will be reported.

Student Teacher #30

Rater # 1
Lesson Analysis
12-16-81

1 O D O	1.	The lesson went well.
1 T D +	2.	I had the high reading group.
2 T/P D +	3.	I explained the directions and the students read the story.
2 SO/T D +	4.	After the story, Kathy said I asked a lot of questions.
1 T D +	5.	I have a definite OKAY problem.
1 T D +	6.	I said OKAY 34 times.
2 T/T D +	7.	I ignored a lot of the students' ideas but I did reinforce some good behavior.
1 T D O	8.	I felt satisfied with the lesson.

Comments:

This student teacher is immature professionally. He/she made only descriptive statements. Although he/she took responsibility for his/her actions, he/she did not recognize cause and effect relationships.

This student teacher needs much guidance to become a mature teacher.

Student Teacher #30

Rater # 2
Lesson Analysis
12-16-81

1 O O Ø	1.	The lesson went well.
1 T D Ø	2.	I had the high reading group.
2 T/P D +	3.	I explained the directions and the students read the story.
1 SO/T D Ø	4.	After the story, Kathy said I asked a lot of questions.
1 T D +	5.	I have a definite OKAY problem.
1 T D Ø	6.	I said OKAY 34 times.
2 T/T D +	7.	I ignored a lot of the students' ideas but I did reinforce some good behavior.
1 T D Ø	8.	I felt satisfied with the lesson.

Comments:

This lesson analysis shows a lack of the assignment of attribution and responsibility.

With this student teacher I would work toward the realization that the teacher must assume more responsibility and recognize how the teacher's behavior affects the students.

Student Teacher #30

Rater # 3
Lesson Analysis
12-16-81

1 O D Ø	1.	The lesson went well.
1 T D +	2.	I had the high reading group.
2 T/P D +/Ø	3.	I explained the directions and the students read the story.
2 SO/T D Ø	4.	After the story, Kathy said I asked a lot of questions.
1 T D +	5.	I have a definite OKAY problem.
1 T D +	6.	I said OKAY 34 times.
2 T/T D +/+	7.	I ignored a lot of the students' ideas but I did reinforce some good behavior.
1 T D Ø	8.	I felt satisfied with the lesson.

Comments:

This student teacher is very immature. She made statements but gave little explanation. There is no evidence of evaluation. In 4 out of the 10 items that I coded, the student teacher did not assume responsibility and on those 4, she did not give evidence of reasons for the personal judgments.

Student Teacher #30

Rater # 4
Lesson Analysis
12-16-81

1 O D Ø	1.	The lesson went well.
1 T D Ø	2.	I had the high reading group.
2 T/P D +	3.	I explained the directions and the students read the story.
2 SO/T D +	4.	After the story, Kathy said I asked a lot of questions.
1 T D +	5.	I have a definite OKAY problem.
1 T D +	6.	I said OKAY 34 times.
2 T/T D +	7.	I ignored a lot of the students' ideas but I did reinforce some good behavior.
1 T D Ø	8.	I felt satisfied with the lesson.

Comments:

This student teacher reported a total of 11 thoughts about the educational event. Three of the eleven were general (The lesson went well .... Kathy said .... Overall, I felt satisfied.) and added nothing of value to the lesson analysis. The student teacher reported one thought about the pupils (The students completed the worksheets.). Eight of the eleven thoughts were about the teacher and her/his behaviors and thoughts. All eight comments that the student teacher made are Descriptive Thoughts. No relationships were reported. The teacher accepted responsibility for the educational event in 6 out of the 8 comments.

In supervising this student teacher, I would take a very directive approach. I would ask questions about what occurred in the lesson so that the number of thoughts recalled would increase. I would particularly like this teacher to recall more pupil behaviors. Data collection should be focused on teacher and pupil behaviors. Once the student teacher could recall more of what occurred within the educational event, my questions would inquire about the effect of certain teacher behaviors on the pupils.

Student Teacher #31

Rater # 1
Lesson Analysis
12-10-81

2 O/T E ++	1.	The activity went very well considering I had the low reading group.
2 T/P D +	2.	I gave instructions and the students did their workbooks.
2 SO/T D +	3.	During the small group, Edna said I asked mostly recall questions.
2 SO/T D +	4.	She reported that I said "Be Quiet" 21 times.
2 T/P E -	5.	I negatively reinforced the students' behavior but these kids are so hyper, I had to.
1 T D +	6.	Overall, I was pleased with the activity.

Comments:

Although this student teacher is still immature professionally, she/he is assuming responsibility for actions. She/he is beginning to recognize causality, although it is misguided.

Student Teacher #31

Rater # 2
Lesson Analysis
12-10-81

2 O/T E -	1.	The activity went very well considering I had the low reading group.
2 T/P D +	2.	I gave instructions and the students did their workbooks.
2 SO/T D +	3.	During the small group, Edna said I asked mostly recall questions.
2 SO/T D +	4.	She reported that I said "Be Quiet" 21 times.
3 T/P/T E -	5.	I negatively reinforced the students' behavior but these kids are so hyper, I had to.
1 T D Ø	6.	Overall, I was pleased with the activity.

Comments:

Responsibility for the educational event is attributed primarily to the student teacher by the significant other. The statements are descriptive in nature. The maturity level is low.

I would work toward the student teacher assuming responsibility and ask "why" questions of the student teacher to lead toward this.

Student Teacher #31

Rater # 3
Lesson Analysis
12-10-81

2 O/T E -	1.	The activity went very well considering I had the low reading group.
2 T/P D +/Ø	2.	I gave instructions and the students did their workbooks.
2 SO/T E Ø	3.	During the small group, Edna said I asked mostly recall questions.
2 SO/T E Ø	4.	She reported that I said "Be Quiet" 21 times.
3 T/P/T E -	5.	I negatively reinforced the students' behavior but these kids are so hyper, I had to.
1 T D +	6.	Overall, I was pleased with the activity.

Comments:

This is a very immature student teacher as evidenced by the lack of assumed responsibility. Most of the comments were reports of events. Explanations that are made relate to things beyond the student teacher's control. Statements are general thoughts or observable teacher behaviors rather than specific student behavior. Also, there are no cause and effect statements made between student teacher and student behavior.

Student Teacher #31

Rater # 4
Lesson Analysis
12-10-81

2 0/T E -	1.	The activity went very well considering I had the low reading group.
2 T/P D +	2.	I gave instructions and the students did their workbooks.
2 SO/T D +	3.	During the small group, Edna said I asked mostly recall questions.
2 SO/T D +	4.	She reported that I said "Be Quiet" 21 times.
3 T/P/T E -	5.	I negatively reinforced the students' behavior but these kids are so hyper, I had to.
1 T D Ø	6.	Overall, I was pleased with the activity.

Comments:

This student teacher reported a total of 12 thoughts about the educational event. Four of the twelve thoughts were general (The activity went very well. Overall, I was pleased with the activity.) or add nothing (Edna said .... She reported that ....) to the lesson analysis. The student teacher reported two thoughts about pupils and seven thoughts about teacher behavior. The student teacher reported two thoughts from significant other who apparently watched the lesson. Both thoughts from the significant other were Descriptive Thoughts. The student teacher reported only two Explanatory Thoughts about the educational event. Both denied the student teacher's responsibility for what occurred (The activity went well considering I had the low reading group. I negatively reinforced students' behavior but these kids were so hyper, I had to.). In both instances the student teacher indicated that the students were in some way responsible for what occurred, not the student teacher.

In supervising this student teacher I would take a very directive approach. I would ask recall questions about the educational event for which I or some significant other had data. I would want data on teacher behaviors and pupil behaviors that were related. My questions would focus upon what did (could the teacher do) to achieve the desired pupil responses. Pre-planning conferences, in which the lesson objectives and teaching methods to achieve those objectives, would be crucial with this student teacher.

Student Teacher #32

Rater # 1
Lesson Analysis
12-3-81

2 P/P D Ø	1.	Janie did her assignment neatly, but she never smiled.
3 T/P/P E -	2.	Today I saw her mumbling to herself, but when she saw me watching her, she quit.
3 T/P/T E ++	3.	I thought at first she might warm up to me if I took the initiative.
3 T/P/P E ++	4.	I talked to her privately, but she would not look at me and obviously wanted only to get away.
3 T/T/P D +	5.	Then I looked over her work and noticed how very neat it was and how carefully she had done every little thing.
4 T/P/T/P E ++	6.	I thought maybe she was under some kind of pressure and—this sounds silly—that she was afraid of making any mistake.
2 T/P E ++	7.	Today when I said, "Someone isn't listening" meaning someone else, she looked as though I meant <u>her</u>.
2 T/T E ++	8.	I thought what I said made her feel guilty.
1 P E -	9.	Maybe she feels guilty about <u>any</u> little thing.
2 T/P D -	10.	I told the class a story about a broken vase in a family and each student wrote an ending for it.
1 P D Ø	11.	Janie wrote, "The wind blowed and it fell off by itself. I didn't do it. I did NOT."
2 T/P E ++	12.	I need to write notes on Janie's papers so that she'll feel good about her work.
1 0 E ++	13.	Maybe this will help me build a relationship with her.
3 T/P/P E ++	14.	I'll try to help her realize that even if she makes a mistake that she's <u>not</u> a bad person.

Comments:

This student teacher is recognizing action that affects the educational events and is taking responsibility for her actions and the effects of her actions. She is becoming mature teacher.

Student Teacher #32

Rater # 2
Lesson Analysis
12-3-81

2 P/P D Ø	1.	Janie did her assignment neatly, but she never smiled.
3 T/P/P E ++	2.	Today I saw her mumbling to herself, but when she saw me watching her, she quit.
2 T/T E ++	3.	I thought at first she might warm up to me if I took the initiative.
3 T/P/P D +	4.	I talked to her privately, but she would not look at me and obviously wanted only to get away.
4 T/T/O/P D +	5.	Then I looked over her work and noticed how very neat it was and how carefully she had done every little thing.
4 T/P/T/P E ++	6.	I thought maybe she was under some kind of pressure and—this sounds silly—that she was afraid of making any mistake.
3 T/P/T E ++	7.	Today when I said, "Someone isn't listening" meaning someone else, she looked as though I meant her.
2 T/T E ++	8.	I thought what I said made her feel guilty.
1 P E -	9.	Maybe she feels guilty about any little thing.
2 T/P D Ø	10.	I told the class a story about a broken vase in a family and each student wrote an ending for it.
2 P/O D Ø	11.	Janie wrote, "The wind blowed and it fell off by itself. I didn't do it. I did NOT."
2 T/P E ++	12.	I need to write notes on Janie's papers so that she'll feel good about her work.
1 T E ++	13.	Maybe this will help me build a relationship with her.
3 T/P/P E ++	14.	I'll try to help her realize that even if she makes a mistake that she's not a bad person.

Comments:

There is evidence of this student teacher assuming responsibility for the behavior of students and her own decisions. There is also evidence of cause and effect relationships through explanatory statements.

I would continue to work on cause/effect relationships and responsibility.

Student Teacher #32

Rater # 3
Lesson Analysis
12-3-81

2 P/P D Ø	1.	Janie did her assignment neatly, but she never smiled.
3 T/P/P D Ø	2.	Today I saw her mumbling to herself, but when she saw me watching her, she quit.
3 T/P/T D Ø	3.	I thought at first she might warm up to me if I took the initiative.
3 T/P/P D Ø	4.	I talked to her privately, but she would not look at me and obviously wanted only to get away.
4 T/T/O/P D ?	5.	Then I looked over her work and noticed how very neat it was and how carefully she had done every little thing.
4 T/P/T/P E ++	6.	I thought maybe she was under some kind of pressure and—this sounds silly—that she was afraid of making any mistake.
3 T/P/T E ++	7.	Today when I said, "Someone isn't listening" meaning someone else, she looked as though I meant her.
2 T/T E ++	8.	I thought what I said made her feel guilty.
1 P D Ø	9.	Maybe she feels guilty about any little thing.
2 T/P D +	10.	I told the class a story about a broken vase in a family and each student wrote an ending for it.
1 P D Ø	11.	Janie wrote, "The wind blowed and it fell off by itself. I didn't do it. I did NOT."
2 T/P E ++	12.	I need to write notes on Janie's papers so that she'll feel good about her work.
1 0 E ++	13.	Maybe this will help me build a relationship with her.
3 T/P/P E ++	14.	I'll try to help her realize that even if she makes a mistake that she's not a bad person.

Comments:

This student teacher shows maturity by observing student behaviors, by interpreting their behavior, and by noting how the teacher's behavior did or can affect student behavior.

Student Teacher #32

Rater # 4
Lesson Analysis
12-3-81

2 P/P D Ø	1.	Janie did her assignment neatly, but she never smiled.
3 T/P/P E +	2.	Today I saw her mumbling to herself, but when she saw me watching her, she quit.
3 T/P/T E +	3.	I thought at first she might warm up to me if I took the initiative.
3 T/P/P D +	4.	I talked to her privately, but she would not look at me and obviously wanted only to get away.
4 T/T/T/P D	5.	Then I looked over her work and noticed how very neat it was and how carefully she had done every little thing.
4 T/P/O/P E -	6.	I thought maybe she was under some kind of pressure and—this sounds silly—that she was afraid of making any mistake.
4 T/P/P/T E Ø	7.	Today when I said, "Someone isn't listening" meaning someone else, she looked as though I meant <u>her</u>.
2 T/T E +	8.	I thought what I said made her feel guilty.
1 P D Ø	9.	Maybe she feels guilty about <u>any</u> little thing.
2 T/P D +	10.	I told the class a story about a broken vase in a family and each student wrote an ending for it.
2 P/O D Ø	11.	Janie wrote, "The wind blowed and it fell off by itself. I didn't do it. I did NOT."
2 T/P E +	12.	I need to write notes on Janie's papers so that she'll feel good about her work.
1 T E +	13.	Maybe this will help me build a relationship with her.
3 T/P/P E +	14.	I'll try to help her realize that even if she makes a mistake that she's <u>not</u> a bad person.

Comments:

This student teacher reported a total of 36 thoughts about the educational event. The thoughts were very specific and were equally divided between teacher (16) and pupil (18). The student teacher was very concerned about how to influence the pupil in a positive manner. Eight of the 14 comments were Explanatory Thoughts. In 9 out of 14 comments the student teacher took responsibility for what had or may occur.

In supervising this student teacher I would take a non-directive approach since she appears to be able to recall what occurred, to be able to relate accurately various events, and quite willing to take responsibility where appropriate.