

CAUSAL ATTRIBUTIONS BY TEACHER-TRAINEES FOR  
SUCCESS AND FAILURE OUTCOMES OF ELEMENTARY  
STUDENTS LABELED NORMAL AND GIFTED

By

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## CHAPTER I

### THE RESEARCH PROBLEM

#### Introduction

While there are many skills required of a teacher, it is perhaps the necessity for daily decision making in the classroom which demands the greatest concentration of these skills by a teacher. The character and quality of interactions between the teacher and student, the nature of instruction, and the teaching methods to be employed are but a few of the factors greatly influenced by the decisions a teacher must make. The true impact of these decisions, either singularly or collectively, is not limited to the environment of the classroom or methodology of teaching. It is the individual student who will be most directly affected and the effects incurred in one class during one school term may well be carried by that student into other classrooms and even through the remaining years of his academic education.

With the more recent emphasis upon matching curricula and special programs to the needs of individual students, the teacher's responsibility for decision making and for making the best assessments of student performance has become an important issue. The process of assessment and decision making about a student's performance may take many forms. Often the form of the process is predicated upon the specifics of a given situation. However, a key to this process is the quality and nature of the information upon which such decisions are based, and

the interaction of this information with teacher variables.

There are many kinds of information available to a teacher and there are many sources of this information. Also, decisions are made for many varying purposes. However, an underlying and common theme of the decision process of teachers is the necessity to determine the causes of certain behaviors or performances. The subsequent evaluation process usually centers around the requirement to attribute a reason for the behavior or level of performance. Teachers may perceive the reason for the performance as either resting within the student or external to the student. Further, in the educational setting of the classroom, with the major focus upon achievement and the performance of various educational tasks, the quality of such performance is usually considered in relationship to past successes or failures of the student. Therefore, the resulting assessment and evaluation of a student's performance may be influenced by the teacher's attributions of the causes of success or failure.

The process by which a teacher makes certain decisions on the basis of perceived causes of behavior has been investigated to a considerable degree over the past decade. The theoretical framework for such investigations has been proposed by Fritz Heider (1944, 1954a, 1954b, 1958) in his work on person perception. In the context of Heider's work, and throughout this study, attribution refers to the process by which an individual attributes causes to the behavior of others. In a more contemporary context, causal attribution theory has been applied to the study of the causes to which individuals attribute various achievement outcomes. It has been demonstrated by Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) that individuals use four elements to explain

causes of an achievement outcome. These elements are: ability, effort, task difficulty and luck (chance). Further, informational cues in an achievement setting influence which causes are inferred for a performance outcome (Frieze and Weiner, 1971). As a teacher makes decisions and subsequently acts upon those decisions, it has been noted that misattribution can and does occur in the classroom and this misattribution may be related to the nature of the information available to the teacher or biases on the part of the teacher. Beckman (1973) has demonstrated that teachers may misattribute the intentions and characteristics of their students. The result of such errors may have direct implications upon the interactions between the teacher and student and that student's subsequent behavior. Problems arising from this kind of error can have a serious impact on the student. This may be especially true in reference to the matching of the curriculum and programs to meet the needs of the exceptional student (Therrien, 1976).

A teacher's perceptions of the student's personal characteristics and the resulting expectations a teacher may have for that student or a group of students are factors which have proven to be influential, not only in the decision making process, but also in the kinds of interactions which occur between teachers and students (Silberman, 1969; Good and Brophy, 1972; and Brophy and Good, 1974). Although there has been a considerable amount of inquiry into this area, with a focus of teacher expectations, a review of the literature reveals few conclusive findings. Most research in this area has sought to establish the direct influence of such expectations upon the performance of the student. Many authors have concluded that various expectations do exist and there are numerous student characteristics which are factors that in-

fluence and interact with teacher expectations and biases. These may be social class and race (Friend and Wood, 1973), sex of student (Palardy, 1959), and attractiveness or unattractiveness of student (Clifford and Walster, 1973).

One associated area which has prompted concentrated study is teacher expectation predicated upon various labels assigned to special groups of students. The interactions between labels and teacher expectations have been on considerable concern in the realm of special education. It has been noted that the development of special education services in the school has been paralleled by the development of labeling categories (Foster and Ysseldyke, 1976).

Most of the work in this area has focused upon the various labels associated with children who have emotional and/or learning difficulties and the influence these labels have on classroom teachers and the teachers' interactions with their students. It has been noted by Foster, Schmidt, and Sabatino (1976) that expectancies for a child labeled "learning disabled" produced a significantly more negative teacher expectancy than the child labeled "normal." The amount of information available on the effects of various labels attached to children who have academic difficulty is extensive but not conclusive. The interaction between these labels and the teacher's activities in the classroom has been the focus of many studies.

However, there are associated areas which have not yet received as much attention, though they are equally important to the educational process and the process of teacher decision making. One such area relates to the attitudes and expectations which teachers-in-training may hold for children in exceptional categories. As noted previously,

teachers often bring with them to the classroom certain biases and attributions prior to actually observing students. The sources of such attitudes and biases may be as varied as are the prior experiences of the individual. These preconceived expectations are potentially strong influences and as such they represent an important and notable area for study. Also, given the variations of teacher training programs, little has been done to ascertain the differences in expectations and attributions toward exceptional children, between teachers who have had special training in areas of exceptionality and those who are trained basically in regular classroom teaching.

The necessity for studying any differences between these two educational areas can be found in several sources. Gillung and Rucker (1977) have noted that regular classroom teachers have lower expectations for handicapped children who are labeled than for children with identical behaviors who are not labeled. However, these authors point out that this was also true for special education teachers with a high level of experience. They found that special education majors with less than seven years experience did not have lower expectations for labeled children. A contradictory finding has been offered by Panda and Bartel (1972). They reported no support in their study for the expectation that teachers with specialized training and specific experience would perceive exceptional children in a more favorable way compared to teachers without such training or experience. Thus, it seems apparent that a better understanding of the differences which might exist commensurate with various levels of training and experience requires continued study. One area which is seen to be a logical starting place would be an investigation into the attitudes and causal

attributions for students held by teachers-in-training, or those relatively new to the field.

Most of the studies which have dealt with a teacher's attributions toward a student's performance, and the possible effects of labels on those attributions, have focused primarily on the child who is performing below normal academically because of some ascribed learning difficulty or mental deficiency. Though it is seldom mentioned as such in the literature, another level of exceptionality is represented by the child who is academically gifted. Practical emphasis in this area is relatively recent. It has been noted by Lyon (1976) that education of the gifted, and the focus upon their special needs, is primarily a result of legislation under the education amendments of Public Law 93-380 (1974). Also, there have been further definitions and criteria of exceptionalities of students under Public Law 94-142 (1975). Therefore, emphasis by public schools on the gifted and other categories of exceptionality, is found increasingly throughout the full range of public education. In a recent study of teacher attitudes and expectations toward the gifted, Smidchens and Sellin (1977) have reported that teachers who have gifted learners in their classes may not necessarily hold more positive attitudes toward such students. This has been previously reported by Jacobs (1972) who noted that teachers in a private school for the gifted, with training in this area, held negative attitudes toward this type of student. Of particular interest was Jacob's finding that this negative attitude was clearly evident among kindergarten and first grade teachers. Such negative biases toward young children, early in their school experience, might have a considerable effect on their entire educational experiences. The impact of such

teacher attitudes, especially in the elementary schools, when the student is in the most formative levels of development and establishment of self-concept, indicates the importance of a better understanding of the dynamics of this situation. Thomas (1973) has referred to the fact that a negative self-concept is one of the most serious problems for the gifted, and this is related to frustrations and poor feelings on the part of these students and may contribute significantly to their alienation from school.

The importance of understanding the needs of the gifted student, as well as the variable interactions between teacher attributions of performance and the student's actual performance, indicates an area of needed study. This is emphasized by studies demonstrating that teachers do, in fact, form attributions of the causes of student behavior, but these may be contrary to the behavior actually displayed (Thomas, 1973; and Foster, Ysseldyke, and Reece, 1975). Attributions of the causes of behavior are seen as relevant to the assessment of the child's performance as well as the teacher's interactions with that child. Such assessment of student performance or aptitude is a major theme in pedagogical decisions. There are various decision making models of teaching (e.g., Shulman and Elstein, 1975; and Shavelson, 1976) in which these teacher assessments are shown to influence the entire decision making process and the subsequent action of the teacher (Borko and Shavelson, 1978). Related to this general area of decision making, there is evidence of the influence of certain teacher expectations on the subsequent performance of the student (Rosenthal and Jacobson, 1968; and Brophy and Good, 1970) and also, that labels of exceptionality produce certain expectations and attitudes of teachers (Yoshida

and Meyers, 1975; and Algozzine and Sutherland, 1977). There is a considerable amount of information regarding these influences as they relate to children with learning difficulties or children with mental or emotional difficulties and handicaps. However, there is a notable absence of information in these areas relating to children who are gifted. Given the emphasis upon the special needs of the gifted, further study in this area of exceptionality is indicated. Finally, the personality, attitudes, and biases of teachers have been shown, in a large number of studies, to effect the student and his performance.

These studies, however, do not all agree about these interactions in the different areas of teaching specialties. There are indications that teachers with varying experience and special training may differ in their attributions and biases as compared to regular classroom teachers. The importance of teacher training and preparation is greater now with the emerging emphasis on special education. In order to insure the quality of such teacher training and generally enhance the decision making skills of teachers, a clearer understanding of any possible distinctions in the skills, and perhaps biases, between the regular classroom teacher and the special education teacher will be required. An approach to understanding any such differences in attitudes would be the investigation of the attitudes and causal attributions of teachers-in-training or those with limited experience.

#### Statement of the Problem

Limited research is available regarding the possible effects which the label "gifted" may have on teacher attributions of the causes of success or failure outcomes of a student. Interactions which may



exist between a teacher's causal attributions, performance outcomes, and any expectations held for a student or group of students, on the basis of sex and labels, has not been investigated thoroughly. A better understanding of the nature of such interactions can contribute significantly to current efforts toward meeting the special needs of students. There is ample evidence of a concern for students in the exceptional categories related to learning disabilities and emotional difficulties; however, there is a limited amount of specific information regarding the needs of exceptional students who are academically gifted, and teacher's attributions of the performance of such students. Teachers with training and experience in special education, as compared to regular classroom teachers without such training, may differ from regular teachers in possible attributions and attitudes toward gifted students. As the quality of interactions between student and teacher may be influenced by teacher attitudes (Good, Biddle, and Brophy, 1975), it can prove beneficial to determine what attributions teachers-in-training have toward the gifted child compared to the normal child. Individually, each of these areas can be seen as a justifiable need for study and further research. An approach to combine these into a single inquiry would meet the requirements for further study as suggested by the literature. Attribution theory (Heider, 1958; Kelly, 1973; and Weiner, 1974, 1976), with its four causal factors of ability, effort, task difficulty, and chance, provides a theoretical framework upon which such a study may be constructed.

### Purpose of the Study

Teacher decision making is in part effected by the causal attributions a teacher ascribes to the performance outcomes of the student. The operation of labeling effects upon these attributions, as well as the sex of the student, has not been fully established. Since labeling has become an integral part of special education, the possible influences of this labeling upon the teacher-child interaction presents itself as an area requiring further research. The purpose of this study is to investigate the effects which the labels of "normal" and "gifted" may have on the causal attributions which teachers ascribe to the success and failure performance outcomes of male and female elementary students and to ascertain any differences in these attributions between teachers who have had training in special education and regular classroom teachers.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The basis upon which teachers make decisions about student performance and the subsequent evaluation of that performance have strong implications for the quality and nature of teacher-student interaction (Borko and Shavelson, 1978). Historically, this area has provided the focus for considerable research. The major emphasis of these studies has been upon those variables which might effect the judgments a person makes regarding the cause of the performance of another (Kelly, 1973). The theoretical framework for such studies has been the attribution theory of Fritz Heider (1958). Further additions to the application of this theoretical perspective have been provided by Kelly (1973) and Weiner (1974, 1976). Kelly (1973) and Kopel and Arkowitz (1975) have provided relatively recent reviews of the application of attribution theory in this area.

The direct application of this theoretical perspective to the teacher-child interaction is represented in studies by Beckman (1973 and 1976); Brandt, Hayden and Brophy (1975); and Therrien (1976). Also, these studies recognize the interactions between the teacher's attributions of the student's performance and the teacher's behaviors toward that student.

The interaction between a teacher's causal attribution of the

student's performance and the teacher's behavior toward that student has been demonstrated by Weiner and Kukla (1970) and Rest and Weiner (1972). They reported that punishment and rewards were differentially administered to students by teachers on the basis of the teacher's attribution of the student's performance outcomes of success and failure as being due to ability, effort, task difficulty, or chance. The potency of the teacher's attribution of the student's performance and the interaction of subsequent expectations which the teacher may hold for the student has been indicated by Johnson, Feigenbaum and Weiby (1964) and Beckman (1970).

It has been noted that the expectations a teacher holds for a student may be related to that student's performance (Rosenthal and Jacobson, 1966). As observed by Beckman (1976) and Crano and Mellon (1978), some studies have failed to replicate the findings of Rosenthal and Jacobson. However, enough evidence remains to suggest that teacher expectations may influence the student's performance. In turn, the student's performance (either success or failure), may affect future teacher expectations (West and Anderson, 1976). As noted by Braun (1976), no single factor in isolation may account for the variable expectations teachers hold for children, but rather, it is the interaction of teacher variables with individual learners that may best explain these expectations (Kehle, 1974).

In this context, it therefore seems appropriate to investigate the interactions of expectations in terms of these teacher variables. One such variable is the attitude the teachers may hold toward a student or group of students. Regardless of the various other sources of expectations, such expectation input must be viewed in relation to

opinions already held by individual teachers (Gaite, 1974).

Such opinions and attitudes are often reflected in the teacher's expectations toward children who have been identified as having certain characteristics and are labeled on the basis of these characteristics. Rubovitz and Maehr (1973) have demonstrated that teacher attention to, or interaction with, labeled students may mediate interpersonal expectancy effects. Also, it has been known that the sex of the student generates cues that affect the teacher's actions toward the student (Palardy, 1969; Metzner, 1971). However, this possible bias has not been investigated as it may influence a teacher's attribution of the causes of student success or failure. Further, the influence of a label on the expectations and attributions of a teacher may be greater than actually observed behavior which is contrary to that label (Mason, 1973; Gillung and Rucker, 1977). For this reason, expectations and attributions for the cause of a student's performance should take into account the nature of that performance in terms of success or failure on a given task.

The use of labels to identify and categorize students on the basis of some characteristics is particularly evident in the area of special education. Foster and Ysseldyke (1976) have noted that the development of labeling categories has paralleled the development of special education services. It has further been noted that the use of labeling for diagnosis and classification purposes has been increasingly criticized (Gozali, 1972; Whelan, 1972). Also, in reference to the term "learning disabled," Foster, Schmidt and Sabatino (1976) reported that this particular label generated a negative bias among teachers sufficiently strong enough to alter the teacher's observation of actual child behavior.

The majority of the literature which focuses on this concern has dealt with the deleterious effects of those labels which refer to students who have learning or emotional difficulties. However, there are students who are sufficiently academically gifted that their exceptionality places them in a population labeled "gifted." There are studies which support the contention that this label may relate to negative expectations and attributions on the part of teachers (Jacobson, 1972; Smidchens and Sellin, 1977). These indications and the limited amount of information available dealing with the possible interaction of this label with subsequent teacher attributions of performance outcomes identifies this as an area needful of further study.

The need for inquiry into this area is additionally supported by the general increase in emphasis currently directed toward the field of special education. Gillung and Rucker (1977) have noted that the regular classroom teacher is becoming increasingly responsible for contributing to the education of exceptional children. This is usually in the context of mainstreaming the exceptional child into the regular classroom which reduces his isolation to a special class. This integration of the programs of the regular classroom teacher with those of the special education teacher emphasizes the importance of understanding any differences which may exist in teacher variables, such as attributions or biases that may be factors associated with differences in special training as distinguished from regular classroom training.

This area of possible differences in expectations between special education teachers compared to regular classroom teachers has been the focus of several studies (Panda and Bartel, 1972; Gillung and Rucker, 1977; and Moore and Fine, 1978). It has been observed in some studies

in this area that teachers with specific experience and specialized training do not perceive exceptional children any more favorably than regular classroom teachers (Panda and Bartel, 1972). These authors have suggested that training after a certain level of education does not bring any major changes or differences in the perception of exceptional children. Jacobs (1972), in a study of teachers attitudes toward the gifted, reported that teachers specially trained and teaching in a private school for the gifted held negative attitudes toward the gifted student similar to those held by high school drop outs who provided as a comparison group for this study. However, Moore and Fine (1978) compared the descriptions of special education teachers with those of regular classroom teachers of a hypothetical educable mentally handicapped child, a hypothetical learning disabled child and a hypothetical normal child. These authors report that the two groups of teachers did see these children differently in terms of descriptive behavioral portraits. The conflicting findings represented by these studies point to an area requiring further research. Also, there may exist differences in attitudes and attributions related to the experience level of teachers. Foster and Ysseldyke (1976) addressed a portion of this problem in their study of teachers-in-training which showed that the expectations of these teachers were, at least in part, a function of assigned deviancy labels. Gillung and Rucker (1977) have also directed attention to this by noting that special education teachers with over seven years experience have lower expectations for children labeled handicapped, whereas special education majors with less than seven years experience did not have lower expectations for labeled students. Further research directed at these possible differences in

attitudes and attributions in relation to training and experience is warranted in order to clarify these inconsistencies.

The studies cited thus far have described several related areas which require further study for clarification. Such a study would be one which investigates the possible differences in the causal attributions by teachers for the success or failure performance of elementary school students on the basis of these students being assigned the labels of gifted or normal. Such an approach would present obvious ethical difficulties. However, there is a precedent for conducting such a study whereby teachers are asked to indicate their causal attributions for the performance of fictional or hypothetical students (Johnson, Feigenbaum and Weiby, 1964; Beckman, 1970; Friend and Wood, 1973; Moore and Fine, 1973; Brandt and Hayden, 1974; and Brandt, Hayden and Brophy, 1975). The efficiency of such an approach as well as its protection against ethical problems associated with labeling an actual student has been presented by Helton and Oakland (1977). The authors note that such an approach allows for the involvement of a larger number of teachers with a minimal amount of time and expense, it facilitates the analysis of the influence of a combination of student characteristics on teacher attitudes and helps insure that teachers react to present rather than past student characteristics.

#### Causal Attribution

In a summary and synthesis of his papers on attribution theory, H.H. Kelly (1973) notes:

Attribution theory is a theory about how people make causal explanations about how they answer questions beginning with "Why?" It deals with the information they use in making



causal inferences, and with what they do with this information to answer causal questions (p. 107).

This theoretical framework has as its base the person perception of Fritz Heider (1944, 1954a, 1954b, 1958) and it has stimulated research in the processes of assigning causes to the behavior of others. The relationship of the study of causal attributions of teachers of the performance of students and the evaluation of that performance to this theoretical base can be seen in Kelly's (1973) statement:

The ascription of an attribute to an entity amounts to a particular causal explanation of effects associated with that entity - reactions or responses to it, judgments and evaluations of it, etc. . . . judgments of the type "property X characterizes entity Y" are viewed as causal attributions (p. 107).

A more straightforward and concise definition is presented by Therrien (1976, p. 206) in her study of teachers' attributions of student ability: "Attribution refers to the process by which an individual (teacher) attributes causes to the behavior of others (students)."

The application of attribution theory in the context of education and teacher attributions of student performance has been a logical outgrowth of the work done by Weiner and Kukla (1970); Frieze and Weiner (1971); Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1972); Shavelson, Caldwell, and Izu (1977); and Borko and Shavelson (1978). Weiner and his associates proposed that individuals use four elements to explain causes of an achievement outcome: ability, effort, task difficulty, and chance (or luck). Further, these authors contend that this attributional information may be categorized along external and internal and stability dimensions. Those factors considered internal to the individual are ability, a stable dimension and effort, a variable dimension. Factors external to the individual are task difficulty, a stable

factor, and chance, a variable factor. The validity of these factors as attributions for success and failure has been established by Frieze (1976). In his study of the attributions and information used by individuals to explain success and failure, he reports that the four attributions noted by Weiner et al. (ability, effort, task difficulty, and chance) accounted for the large majority of causal attributions reported by subjects in his study. He further noted that this was especially true in school achievement situations.

In relation to school achievement situations, attribution theory has proven to be a useful framework for investigating teacher's causal attributions for student's performance outcomes and possible interactions between these attributions and the teacher's behavior and attitudes toward the student. Borko and Shavelson (1978, p. 271) have noted that: "In addition to specific situational cues, the type of cognitive structure that is used to derive causal judgments may effect perceived determinants of success and failure." Causal schema is the label used to identify one of these cognitive structures which influences causal judgments. These represent ways of thinking about the relationship between an observed event and the perceived causes of that event. Kelly (1973) notes that they provide the person a means of making causal attributions given limited information. Further, when an individual has limited information from only a single observation, several causal schema are involved to explain that particular event. In the context of achievement-related situations, there are two causal schemata that are most relevant. Where outcomes are moderate, a multiple sufficient causal schema may be used. Each possible cause, in and of itself, is seen as potentially sufficient to produce the effect. An example is

provided by Kan and Weiner (1973), who note that if a person's ability is perceived to be an adequate explanation for an observed achievement outcome, the other possible causes (e.g., task difficulty and luck) will be discounted. The other causal schemata are referred to as compensatory schema. This is related to those conditions in which certain causal factors, if sufficiently strong, can overcome or compensate for the effects of other causal factors. This concept involves Kelly's (1973) augmentation principle. He notes that according to this principle, when inhibitory factors (i.e., factors that suppress an observed event) are present, attributions to other plausible causes will become stronger. If a student receives high grades, but does not try hard in school (lack of effort is the inhibitory factory with respect to his achievement), the classroom teacher may infer that learning activities are easy enough to compensate for the student's lack of effort. Therefore, the role of task difficulty in producing the high grades is augmented.

This perspective of viewing the use of information in making various causal attributions contributes significantly to the understanding of the teacher's decision making process in this area. Borko and Shavelson (1978) note that attribution studies are based on the assumption that the information available to and used by teachers is reliable. However, in actuality much of this information is unreliable as it comes from many sources other than direct observation. As noted by Dusek (1975) and Smith and Luginbuhl (1976), in controlled situations, teacher interactions with students are influenced by unreliable information about the students. Since the broad range of information available to teachers in the classroom is more likely to be a combination of

both reliable and unreliable information, the findings of Yoshida and Meyers (1975) are significant. They found that in those instances where teachers were provided both reliable and unreliable information those teachers attended more to the reliable information. Specifically, in their study, they reported that teacher's estimates of a student's future performance were more strongly influenced by the teacher's own observations than by unreliable prior information.

As can be noted in the literature, attribution theory and its application to school achievement situations, proves to be a useful framework for investigating teacher's causal attributions for student's performance outcomes and possible interactions between these attributions and the teacher's behavior and attitude toward the student.

As noted previously, the quality of information available to teachers has a direct relationship to the attributions made by the teacher. Beckman (1973) has noted that misattribution may occur in the classroom whereby teachers may misattribute the intentions and characteristics of students. This kind of error which can be made by an adult making causal attributions for the performance of a student has been demonstrated by Friend and Wood (1973). They reported a study whereby the causal attributions of responsibility for the performance outcomes of 5th grade children were compared to the attributions actually made by those children in an earlier study (Friend and Neale, 1972). Specifically, adults were asked how they thought 5th grade children, differentiated on the basis of socio-economic status and race, explained their performance on a reading task in terms of ability, task difficulty or chance (described as lucky guessing). There was lack of agreement between the attributions offered by adults and those actually presented

by the children. Brandt, Hayden, and Brophy (1975) presented a study of the attitudes of teachers and their ascriptions of causation. The authors investigated the possible effects a student's performance and motivational level might have on teachers' attitudes toward students and teachers' ascriptions of causality to the performance of these students. Also, these authors investigated any effect the sex of the student and the student's locus of control might have on these interactions. Using university students who were not identified as education majors, the authors used a paradigm employing simulated conditions. They report that subjects who taught successful students rated their presentation more favorably and attributed more responsibility for the students' performance to themselves. Students labeled "highly motivated" were rated more favorably. The male subjects rated student skill (ability) higher than female subjects. These authors concluded that student performance was a predominant factor in determining teacher attitudes, but the ascribed motivational level (effort) modified the performance effect.

Further evidence of the influence which attributions are reported to have on teacher-student interaction may be found in the work of Weiner and Kukla (1970). A major area of interaction between the teacher and student is found in the process whereby the teacher serves as the agent for reward and punishment. Weiner and Kukla (1970) have presented a study which has investigated the interaction of attributions for performance and the assignment of rewards and punishment on the basis of performance outcomes. They report that students described as having ability but putting forth low effort received smaller rewards for excellent performance and larger punishment for failure. Those

students described as having motivation but low ability received larger rewards for excellent performance and smaller punishment for failure. A slight modification of this study was conducted later by Rest and Weiner (1973). In this paradigm, punishment and rewards were administered by subjects with the subjects being provided additional information regarding student performance in relation to the attribute of effort being presented as either a state or trait. Also, the study investigated the subject's evaluation of effort and ability as these might be influenced by the perceived difficulty of the task. As a partial replication of the previous study (Weiner and Kukla, 1970), the increased reward for low ability over high ability was explored further. There were significant findings. Task difficulty did not significantly influence judgment and subsequent reward. Independent of task difficulty, the more successful the outcome and the greater the effort, the larger the reward. Also, there was a significant ability-effort interaction such that the effects of high effort on reward were greater in low ability than in high ability conditions. The authors concluded that the more successful the outcome, the greater was the amount of inferred effort.

This study by Rest and Weiner (1973), like many of those mentioned thus far (e.g., Weiner and Kukla, 1970; Beckman, 1973; Friend and Wood, 1973; Brandt, Hayden, and Brophy, 1975; and Helton and Oakland, 1977) have employed a paradigm using hypothetical or fictitious students or simulated conditions. There is a precedent in the literature for such paradigms in addition to specific rationales relevant to teacher expectation and teacher attribution studies. This has been well presented by Brandt, Hayden, and Brophy (1975). An intervention method which in-

volves giving subjects false information which may lead them to treat some students negatively presents ethical problems. Further, use of fictional or hypothetical students prevents possible confounding effects of teacher-student interactions on the evaluation of the direct effects of ascription and teacher attribution. Additional rationale for this approach is presented by Helton and Oakland (1977) who note that the use of fictional students facilitates the analysis of the influence of a combination of student characteristics on teacher attitudes.

#### Teacher Expectation

Relative to the general area of teacher expectations are such factors as the descriptions of the student, or group of students, in relation to his performance, and the teacher's response to that description and the student's performance. Further, this area of teacher expectation involves possible differences in teacher behavior toward the student on the basis of certain student traits or characteristics.

Rosenthal and Jacobson (1968) suggested that teacher expectations of a student may influence the actual performance or achievement of the student. Since their study was originally conducted, there have been numerous attempts to replicate these findings with conflicting results. Claiborn (1969), Fleming and Antonnen (1971), and Jose and Cody (1971) failed in their attempts to replicate the original Rosenthal findings. However, Beez (1970), Rothbart, Dalfen, and Barrett (1971), and Brophy and Good (1974) used a paradigm different from Rosenthal's to demonstrate the possible effects of teacher bias. In an effort to explore the formulation of teacher bias, Mason (1973) reports that teachers

were more influenced by negative information about students than they were by positive or neutral information. Also Mason was the first to report a discrepancy between what teachers expected of a child and what they actually saw. He noted that teachers' expectations were influenced by biased material (a biased psychological report) differentially than they were by actual perceptions of actual behavior.

Information which may bias a teacher and the teacher's expectations of a student may come from many sources. These may be external to the student or internal, in terms of certain characteristics. Bellamy (1975) notes that a teacher's information about a student, whether it results from disability or trait labels, expectancy instructions or the teacher's own observations, is used to deduce certain contingencies, which specify the character of a teacher's behavior toward the student.

One possible source of teacher bias or expectations which has been a focus of prior study is the possible interaction between sex of pupil, sex of teacher and teacher attributions and attitudes. Though this student trait has been attended to in numerous studies, there are no clear and concise findings in the area of the possible effect a student's sex may have on a teacher's attributions of performance outcomes. Palardy (1959) observed that the sex of the learner generated cues that effected teacher actions toward pupils. Metzner (1971) noted that the sex of the student is a source of teacher bias with boys typically favored less than girls. Good, Sikes, and Brophy (1973) determined that in terms of different teacher behavior toward different groups of students, the sex of the pupil did not interact with the sex of the teacher. Deaux and Emswiller (1974) report that boys received lower ratings on attitudes and work habits than girls, and the judgment of the behavior



by others is effected by the sex of the student. They noted that the sex role appropriateness of behavior can have implications for causal explanations. Brandt and Hayden (1974) and Brandt, Hayden, and Brophy (1975) have attended in some detail to the possible influence of the sex of the student upon teachers' attitudes and ascriptions of causation. Brandt and Hayden (1974) suggested that male subjects performed better in and tended to prefer dealing with student failure situations in comparison with female subjects who tended to perform better and to prefer success situations. It has also been noted that previous investigations have seldom revealed consistent differences (Brophy and Good, 1974). Brandt, Hayden, and Brophy (1975) reported that males rated student skill higher than females and males and females rated poorly motivated students similarly low, but males rated highly motivated students relatively higher than female subjects. The sex of the student was isolated from being a factor in this study. The student was fictitious and non-existent, and the subject taught through a one-way setup which kept him unaware. During the experiment, all subjects assumed they were, in fact, teaching to a real student. The student's performance outcome (success or failure) was reported to the subject by an experimenter.

The diverse findings of these studies dealing with the possible influences of the sex of the student upon teacher attitudes indicates a lack of agreement on how this influence might operate. There is sufficient evidence to believe that there may be such influence but no clear findings as to its nature or direction. Further study seems warranted.

The central issue regarding expectations is well summarized by Braum (1976):

Past research has allowed for tenable hypotheses: One of these suggests that teachers for varied reasons perceive competencies and potentialities of children differently and these expectancies are reflected in the teacher's interactions with children to produce differential performance among the learners, thus fulfilling the teacher's prophecy (p. 185).

In addition to the various sources of teacher bias and expectations, there is evidence that these may exist prior to the teacher's interaction with the students (Beez, 1970; Rothbart, Dalfen, and Barrett, 1971; and Rubovitz and Maehr, 1973).

Also, there yet remains some disagreement in relationship to the cause and effect sequence of teacher expectations and student performance (Fleming and Anttonen, 1971; Murphy, 1974; West and Anderson, 1976; and Crano and Mellon, 1978). West and Anderson have proposed a model which contends that student achievement influences teacher expectations. Fleming and Anttonen noted that teachers form attitudes or expectations based on actual behavior and timing is crucial; when teachers form expectations after teacher-student interaction there is no reason to believe teacher expectations caused later achievement or lack of it. Murphy (1974) contends that teachers constantly modify their expectations as a result of student performance. However, Crano and Mellon (1978) present impressive evidence for the effects of teachers expectations on student performance. In a four (4) year longitudinal study of 430 elementary school students, they concluded that teacher expectancy caused student achievement to an extent exceeding the child's performance influencing teacher expectations.

What is of importance, for the purpose of this study, is that teacher biases, attitudes and expectations regarding information and observations about a student do influence the teacher-student interaction and interact with the subsequent performance of the student.

### Effects of Labels and Student Characteristics

Evidence of different teacher behavior influenced by labels and student characteristics abound in the literature. Rubovitz and Maehr (1973) observed that pupils labeled as gifted received significantly more criticism and more attention than students not labeled. These authors contend that teacher's attention to or interaction with labeled students may mediate reported interpersonal expectancy effects. Clifford and Walster (1973) reported that attractive children were perceived by teachers to possess a higher IQ, greater educational potential and more interesting parents than physically less attractive students. Palardy (1969) reported that the sex of the learner generates cues that effect the teacher's action toward the student. Salvia, Clark and Ysseldyke (1973) and Foster, Ysseldyke, and Reese (1974) have demonstrated that negative labels produce negative ratings of observed student behavior. Davidson (1972); Good and Brophy (1972); and Schwebel and Cherlin (1972) represent studies in which there is evidence that during classroom interactions, teachers treat groups of students differently.

The influence of the effects of labels on teachers and possibly their attributions of a student's performance is evident in studies such as Gillung and Rucker (1977) who observed that teachers had lower expectations for handicapped children who were labeled than children with identical behaviors who were not labeled. Also, Foster and Salvia (1977) report that even though teachers were admonished to be objective, the influence of the "learning disabled" label was such that teachers reported observing more deviancy in the behavior of a child who was thus labeled than they reported after observing that same child, un-

labeled.

As noted previously, the use of labels to identify and categorize students on the basis of some trait or characteristic is particularly evident in the area of special education and in programs for exceptional children. However, there is an increasing resistance to the use of labels (Gozali, 1972; Whelan, 1972). Although this resistance has, in part, increased the awareness among educators of the possible negative effects such labeling may present, they are still utilized. Generally, it is the exceptional child who is placed in these various labeled categories. Numerous studies have provided evidence that teachers react differently to children so labeled. Most studies in this area have detailed the biases attributed to labels associated with learning and emotional difficulties such as: "learning disabled," "educable mentally handicapped," "educable mentally retarded," and "emotionally disturbed," (Panda and Bartel, 1972; Salvia, Clark, and Ysseldyke, 1973; Foster, Ysseldyke, and Reese, 1974; Yoshida and Meyers, 1975; Bryan and Wheeler, 1976; Foster, Schmidt, and Sabatino, 1976; and Foster and Salvia, 1977).

However, it must be noted that within this category of exceptional children, there are also those students who are academically gifted and labeled "gifted." There is much less literature available on the effects of this label or any clearly defined interactions between teacher behaviors toward these students, differences in causal attributions or expectations. Rubovitz and Maehr (1973) have reported that pupils labeled gifted received significantly more criticism from teachers. Smidchens and Sellin (1977) noted that teachers with gifted pupils in their classrooms did not necessarily view them more positively. Beez (1970) reported that teachers were observed to teach more to students

labeled "high ability" than to those labeled "low ability." Rothbart, Dalfen, and Barrett (1971) observed that teachers were more attentive to children labeled "bright" than to those labeled "dull." Jacobs (1972) measured teacher attitudes toward the "gifted" using teachers from a private school for academically gifted students compared to attitudes toward the gifted of a group of high school drop outs. He reports that both groups had similarly low attitudes toward the gifted students. It has also been noted that society holds expectations for the gifted which place unrealistic demands upon the student. Magary and Freehill (1972) have noted:

Usually the gifted are expected first to meet the common requirements and then to contribute in special ways. In school they have been expected to perform above average in carrying out common tasks, with the additional expectations that they should accomplish more work, demonstrate more knowledge, make more logical use of facts, and show persistence (p. 185).

With the present emphasis on special education for exceptional children and the limited and conflicting evidence available regarding the gifted student, there appears to be a logical area requiring further study. In the context of this present research, it seems strongly indicated that an investigation of the interaction between the teacher's attribution for a performance outcome and the label of "gifted" as compared to "normal," would meet a need represented by the literature in this area.

In addition to the employment of labels to distinguish student characteristics, the field of special education presents another area which has called for investigation. This area is represented by the possible differences in teacher attitudes and responses to exceptional students on the basis of special training and experience of special

education majors as compared to the regular classroom teacher.

Attitudes of Special Education and Regular  
Classroom Teachers Toward  
Exceptional Children

Gillung and Rucker (1977) have noted an increased role of the regular classroom teacher in the education of the exceptional child with the emphasis on mainstreaming. They investigated the expectations of regular classroom teachers for handicapped children compared to the attitudes of special education teachers. They reported that both the regular classroom teacher and the special education teacher had lower expectations for the child labeled handicapped than for the unlabeled child with identical behavior. However, there was also a difference reported on the basis of experience level of the special education teachers. Those with seven years experience or more had lower expectations than those with less than seven years. Panda and Bartel (1972) analyzed and compared perceptions of exceptionalities by teachers as a function of their training and experience in teaching exceptional children. Their data did not support their expectation that teachers with specific experience and specialized training would perceive exceptional children in a relatively more favorable way compared to teachers having no such experience or training. Moore and Fine (1978) compared regular and special class teachers' perceptions of normal and exceptional children. Using hypothetical children labeled educable mentally handicapped, learning disabled and normal, they reported that the three groups of teachers (regular classroom, learning disabilities and EMH teachers) all agreed in viewing the children differently. In a study of teachers-

in-training, Foster and Ysseldyke (1976) reported that those inexperienced teachers held negative stereotypes toward children labeled emotionally disturbed, and those stereotypes were maintained in spite of observable behavior which was inconsistent with the emotionally disturbed label. This represents findings contradictory to those of Panda and Bartel (1972).

There appears to be somewhat inconsistent findings in this area. The studies dealing with this issue do not agree on the possible differences that may exist between the attitudes and attributions of teachers with special training and experience and teachers who have had no such training or experience. Further, the majority of these studies have dealt with attitudes associated with the exceptionalities related to learning and emotional difficulties. There has been only limited attention to possible differences in attitudes toward normal and gifted students of special education teachers compared with regular classroom teachers. Further information in this area would contribute to a clearer understanding of this issue.

#### Summary

The decisions teachers make regarding their students and their assessment of student performance can be affected by many variables. A clearer understanding of the process by which a teacher uses information about a student and then ascribes certain causal attributions to the success or failure outcome of that performance is needed. A theoretical perspective from which to investigate this process is found in attribution theory. Attribution refers to the process by which an individual attributes causes to the behavior of another person. The

literature suggests a model for viewing these possible causes which categorizes them on the dimensions of internality and externality and stability and variability. The causes for a performance outcome on the internal dimension are: ability (stable) and effort (variable). The causes on the external dimension are: task difficulty (stable) and chance or luck (variable). These causes can be used to explain one's own behavior or the behavior of another. In the context of the educational setting, the teacher's causal attributions for a child's performance is an area worthy of study. The interaction between the teacher and student is influenced by teacher attributions. Teacher judgments, relevant to rewards and punishments, and the teacher's inferences of the student's motivation and ability are a few of the areas influenced.

Further, it has been noted that teacher attributions for student performance may be effected by biases, expectations, and certain student traits and characteristics. There may be many sources of such biases. The literature identifies the sex of the student as one such source of differential treatment of students by teachers. There are conflicting findings by previous investigations in this area. The majority of the studies on sex differences do recognize this as a factor in teacher behaviors and attitudes toward students, but they do not agree on the nature or direction of this bias. Also, labels assigned to children on the basis of some exceptionality, trait, or characteristic have been noted as causes for differences in teacher-student interactions. Generally, the literature supports the contention that labels produce negative effects. However, most of the labels investigated are those relating to exceptionalities associated with learning or emotional difficulties. Another area of exceptionality is represented by the gifted



student. Investigations in this area have not produced conclusive results. However, there is sufficient evidence to believe that teachers may hold negative attitudes toward the gifted. The literature is limited in this area, and with the present emphasis on providing full opportunities for all exceptional children, further study of the possible effects the labels "gifted" and "normal" may have on teacher attributions for performance seems warranted.

In relation to the emphasis upon meeting the needs of the exceptional child, the field of special education as compared to regular classroom teaching has also been a focus of attention. In the context of this present study, there is evidence to suggest that teachers with special training and experiences may hold attitudes and causal attributions differing from those teachers who have not had such special training or experience. A more thorough investigation of this possible difference may contribute to better meeting the special needs of a student.

The general areas identified by the literature dealing with teacher attributions of performance outcomes of students labeled gifted and normal can be investigated using a paradigm previously employed in the study of teacher attitudes and attributions. Such studies have provided to subjects information regarding performance and attributions, as well as traits and characteristics of hypothetical or fictitious students. This methodology meets ethical concerns and has provided better variable control.

## CHAPTER III

### METHOD AND PROCEDURE

#### Subjects

The method employed in this study is a modification of the paradigm used by Friend and Wood (1973). Their subjects, consisting of forty-six college students, were requested to answer a short questionnaire. It was explained to these subjects that an experiment with ten year old fifth graders had just been conducted. They were also told that each child was given a reading test and provided feedback on the success or failure of his or her performance. The subjects were then given a brief explanation of how a person may use four factors to which they attribute success or failure. Those factors were described as ability, motivation (effort), task difficulty, and lucky guessing (chance). After a further explanation of the study described, the subjects were then given instructions requesting that they predict how the children in the experimental groups responded to their success or failure on the reading task. Descriptions of these children and a scale on which they were asked to rate their performance and feelings were provided to the subjects. These descriptions (8) combined two levels of social class, two levels of race, and two levels of performance feedback. Subjects were then asked to rate (on an eight-point scale) whether ability, effort, task difficulty, or lucky guessing accounted for the performance.

Subjects for the present study were those teacher-trainees present in various upper-division education classes on specified testing days. A total of 80 (11 male and 69 female) undergraduate education majors participated in this study (40 special education and 40 regular elementary education). These individuals were enrolled in education classes in the summer session, 1978, at Oklahoma State University, Stillwater, Oklahoma. The two subject groups were designated Regular Elementary Education Majors and Special Education Majors. For each of these two groups, subjects were randomly assigned to one of two treatments, consisting of gifted or normal labels. Each subject then received repeated measures on the treatment of: sex (male and female), performance (success and failure), and attribution categories (ability, effort, task difficulty, and chance). This was accomplished by the information and manner of presentation of the descriptions provided the subjects.

#### Procedures

The data were collected through the use of group administration of instructions in the classroom setting. To prevent either of the two subject groups from becoming aware that they comprised a specific subject group, all individuals in the classroom were administered the instructions and stimulus questions. That is, the regular education majors and special education majors were in the same classroom as those individuals who participated but whose responses were not used. This procedure was followed to preclude members of the two subject groups from responding in what they might perceive to be a socially desirable way. Such socially desired responses were believed to be more likely if subjects knew there was a specific interest in comparing regular ele-

mentary education majors with special education majors. Following the administration of the group instructions, an envelope containing a prepared set of stimulus questions and conditions was provided to each individual. These conditions specified a set of treatment combinations and, on the basis of a coded label on the outside of the envelope, were randomly assigned to individuals in the class. By generally shuffling the envelopes before handing them out to participants and noting the label designation (either S for gifted label or D for normal label) it was possible to insure roughly equal and random distribution. These envelopes had been prepared in advance. Each contained four sheets of paper, in randomized order, with each sheet bearing one of the four condition descriptions. Depending on the random assignment, each subject received either an envelope containing four "gifted" or four "normal" conditions:

<u>Gifted Label Conditions</u>	<u>Normal Label Conditions</u>
1. Gifted, male, success	1. Normal, male, success
2. Gifted, male, failure	2. Normal, male, failure
3. Gifted, female, success	3. Normal, female, success
4. Gifted, female, failure	4. Normal, female, failure

These four situations combined two levels of sex and two levels of performance.

For each of the four situations, subjects were asked to rate the relative influences they believed ability, effort, task difficulty, and lucky guessing had in accounting for the student's performance.

Prior to giving the group instructions, the following general information was provided:

A study of elementary school children has been conducted and researchers are interested in how education majors perceive student performance in the classroom. When a student performs an academic task, teachers evaluate that performance on

the basis of success or failure outcome. There are four basic factors which may identify the cause of a student's success or failure on a task: ability, effort, task difficulty, and luck.<sup>1</sup> In the study previously conducted with elementary students, each child was given a reading task and his performance was recorded. In addition, researchers are also interested in how teachers view the performance of students who may vary on a trait or characteristic. The children in this study have been identified as a "gifted student" or a "normal regular classroom student" and these two student groups contain both male and female students. "Gifted students are described as those whose characteristics qualify them for this label. "Normal" students are those who have no characteristics which qualify them for any other category.

Following the presentation of this general introduction the individual envelopes were distributed to the individuals in the class. They were then given the following instructions:

We would like for you to consider the elementary children in this previous study and indicate the causal attribution you feel best accounts for the student's performance on the reading task. You will find descriptions of the student and that student's performance. Given this performance for the described student, indicate the amount of influence you believe each of the following causes contributed to the student's performance by circling the appropriate number for each factor. Please remove all of the descriptions from the packet and respond to the top description first. Upon completing it, return it to the packet and respond to the second description, then return it to the packet upon completion. Continue in this fashion, returning each completed description to the packet without referring to them once completed.

The envelopes, received by each participant, had a label attached to the front of it. The label carried the following information:

Male	Female
Special Education	
Elementary Education	
Other	
	S or D

Prior to opening the packet, subjects were asked to circle their appropriate sex and major. The letters S or D were used for scoring purposes.

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<sup>1</sup>Luck has not been defined clearly. Here it will be defined as lucky guessing.

to designate whether the packet contained "gifted" label conditions (S), or "normal" label conditions (D). As noted previously, this key letter enabled the researcher to hand out the envelopes in an approximately equal number to the participants and as the examiner passed out the envelopes and kept them generally shuffled, it was possible to distribute them on a roughly random basis.

The situations, typed on separate sheets, were presented in the following form:

D.L. is a (gifted or normal) (male or female) student in elementary school, whose performance on a reading task was a (success or failure) compared to the other members of the class. This student's performance can be attributed to:

Lack of ability	1	2	3	4	5	6	7	8	High ability
Lack of effort	1	2	3	4	5	6	7	8	High effort
Very easy task	1	2	3	4	5	6	7	8	Very difficult task
Lucky guessing	1	2	3	4	5	6	7	8	Unlucky guessing

It should be noted that the factor of Lucky guessing to Unlucky guessing is in reverse of the other three factors on the scale, following the paradigm of Friend and Wood (1973).

#### Research Questions

This research attempted to answer the following questions:

1. Do teacher-trainees attribute performance outcomes to different causal factors?
2. Do elementary major teacher-trainees and special education major trainees differentially attribute performance outcomes to different causal factors?
3. Do teacher-trainees attribute performance outcomes to different causal factors differentially for male children than female children?
4. Do teacher-trainees attribute performance outcomes to different

causal factors differentially for children labeled normal versus children labeled gifted.

5. Do teacher-trainees attribute performance outcomes to different causal factors differently for children who perform at different levels?

### Hypotheses

In this investigation of the causal attributions of elementary and special education majors for success and failure performance outcomes of male and female elementary students, labeled either gifted or normal, the following hypotheses have been formulated:

Hypothesis 1: Teacher-trainees will not attribute performance outcomes to different causal factors.

Hypothesis 2: Elementary major teacher-trainees and special education teacher-trainees will not differentially attribute performance outcomes to different causal factors.

Hypothesis 3: Teacher-trainees will not attribute performance outcomes differently for male children than female children.

Hypothesis 4: Teacher-trainees will not attribute performance outcomes to different causal factors differentially for children labeled normal versus children labeled gifted.

Hypothesis 5: Teacher-trainees will not attribute performance outcomes to different causal factors differently for children who perform at different levels.

### Analysis of the Data

All five research questions and hypotheses were investigated by the use of a split-plot factorial (SPF-pr·quv) design (Kirk, 1968).

The split-plot factorial design was chosen for the following reasons:

Examination of the effects of experimental treatments is often difficult due to subject heterogeneity which may obscure actual treatment effects. The use of repeated measures in the split-plot factorial design controls for subject heterogeneity, thus clarifying experimental treatment effects (Kirk, 1968).

For this study, a completely randomized factorial design would require a minimum of 640 subjects in order to obtain adequate power. The use of the split-plot factorial design with repeated measures, permits the use of a considerably smaller sample of subjects (Kirk, 1968).

When using repeated measures in the split-plot factorial design, it is possible that error terms are not independent. The  $F_{\max}$  (Kirk, 1968, p. 302) ratio allows for testing for homogeneity of error terms. Should it be found that error terms are heterogeneous, Kirk (1968) recommends that conservative F tests be used. These procedures, as described by Kirk (1968) were followed in this study.

Tests for hypothesis 1 were the main effects of Attribution. The test for hypothesis 2 was the Major by Attribution interaction. The test for hypothesis 3 was the Label by Attribution interaction. Hypothesis 4 was tested by the Performance by Attribution interaction. The test for hypothesis 5 was the Sex by Attribution interaction. Higher-order interactions were examined in order to provide clarification of the tests of the hypotheses. The experimentwise error rate of  $p < .05$  was established as the minimum requirement for significance.



## CHAPTER IV

### RESULTS

#### Introduction

The purpose of this study was to investigate the effects which the labels of "normal" and "gifted" may have on the causal attributions which teacher-trainees make for the success and failure performance outcomes of male and female elementary students. Further, this study was for the purpose of ascertaining any differences in these attributions between teacher-trainees who have had training in special education and regular elementary education.

Attribution theory (Heider, 1958; Kelly, 1973; Weiner, 1974, 1976) was utilized as a perspective from which to determine if teacher-trainees attribute specific performance outcomes to different causal factors (ability, effort, task difficulty, and chance).<sup>1</sup> Also, differential attribution of performance outcomes to different causal factors by elementary major trainees and special education major trainees was investigated.

It was a further purpose of this study to determine if elementary education major trainees and special education major trainees differ-

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<sup>1</sup> Throughout this discussion and the remaining chapters, luck and chance will be used interchangeably in reference to the causal factor which Heider (1958) and Kelly (1973) refer to as chance. Specifically, it is referring to a student perceived as lucky or unlucky in guessing.

entially attribute performance outcomes to different causal factors. Differences in teacher-trainees' attributions of performance outcomes to different causal factors differentially for male students than for female students was also explored. Additionally, this study investigated teacher-trainees' attributions for performance outcomes to different causal factors differentially for students labeled normal versus those labeled gifted. It was also a purpose of this study to ascertain if teacher-trainees attribute performance outcomes to different causal factors differentially for students who perform at different levels (success/failure).

The split-plot factorial (SPF-pr·quv) research design (Kirk, 1968) was employed to investigate these five research questions.

A summary of the analysis of variance is presented in Table I. As can be seen from this table, two main effects, Outcomes (D) and Attribution Categories (E) are significant. Three two-way interactions, Trainee Major by Attribution (AE), Label by Attribution (CE), and Performance Outcomes by Attribution (DE), and two three-way interactions, Major by Sex of Student by Attribution (ABE), and Label by Outcome by Attribution (CDE) are also significant. Further, one four-way interaction, Sex of Student by Label by Outcome by Attribution (BCDE) is significant.

Hartley's  $F_{\max}$  test (Kirk, 1968, p. 62) for testing the assumption of homogeneity of error variance is significant,  $F = 8.74$ ,  $p < .05$ , indicating that error variances are heterogeneous. Further testing indicates two sets of homogeneous error terms: Subjects Within Groups, D x Subjects Within Groups, E x Subjects Within Groups, DE x Subjects Within Groups ( $F = 1.49$ ,  $p > .05$ ); and B x Subjects Within Groups, BD x

Subjects Within Groups, BE x Subjects Within Groups, BDE x Subjects Within Groups ( $F = 1.16$ ,  $p > .05$ ). For F tests where heterogeneous error terms are pooled, the F table was entered using conservative degrees of freedom, as suggested by Kirk (1968, p. 262).

TABLE I  
SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE

SOURCE	SS	df	MS	F	p
<u>Between Subjects</u>	430.800	79			
A (Major)	3.003	1	3.003	.54	
C (Label)	.113	1	.113	.02	
A x C	5.253	1	5.253	.95	
Subj. W. Groups	422.431	76	5.558		
<u>Within Subjects</u>	5072.000	1200			
B (Sex)	.050	1	.050	.08	
A x B	1.953	1	1.953	3.03	
B x C	.013	1	.013	.02	
A x B x C	.003	1	.003		
B x Subj. W. Groups	48.981	76	.644		
D (Outcome)	172.578	1	172.578	34.96	.0001
A x D	1.513	1	1.513	.31	
C x D	4.753	1	4.753	.96	
A x C x D	5.513	1	5.513	1.12	
D x Subj. W. Groups	375.114	76	4.936		
E (Attribution Category)	555.381	3	185.127	36.51	.0001
A x E	71.991	3	23.997	4.73	.0034
C x E	292.269	3	97.423	19.21	.0001
A x C x E	3.141	3	1.947	.21	
E x Subj. W. Groups	1156.219	228	5.071		
B x D	.078	1	.078	.12	
A x B x D	1.013	1	1.013	1.59	
B x C x D	.528	1	.528	.83	
A x B x C x D	1.513	1	1.513	2.38	
BD x Subj. W. Groups	48.369	76	.636		
B x E	2.081	3	.638	.96	
A x B x E	7.816	3	2.605	3.62	.0140
B x C x E	4.019	3	1.340	1.86	
A x B x C x E	.866	3	.289	.40	
BE x Subj. W. Groups	164.219	228	.720		
D x E	1059.116	3	353.039	94.72	.0001
A x D x E	1.394	3	.465	.12	
C x D x E	40.066	3	13.355	3.58	.0146
A x C x D x E	19.169	3	6.390	1.71	
DE x Subj. W. Groups	849.756	228	3.727		
B x D x E	.441	3	.147	.20	
A x B x D x E	1.144	3	.381	.51	
B x C x D x E	9.416	3	3.139	4.23	.0063
A x B x C x D x E	2.419	3	.806	1.09	
BDE x Subj. W. Groups	169.081	228	.742		
TOTAL	5502.800	1279			

### Tests of Research Questions

Five research questions will be discussed in terms of the statistical results of the data.

Question 1: Do teacher-trainees attribute performance outcomes to different causal factors? Referencing Table I, it can be seen that the main effect of Attribution ( $F = 36.51, p < .0001$ ) is significant, indicating attributions to different causal factors. Scheffé post hoc comparisons of means (Kirk, 1968, p. 269)<sup>2</sup> indicates that teacher-trainees make higher attributions to ability than to effort, task difficulty, and chance (Table II and Figure 1).

TABLE II  
MEANS AND SCHEFFÉ POST HOC COMPARISONS FOR THE  
MAIN EFFECT OF ATTRIBUTION CATEGORIES

	ABILITY	EFFORT	TASK DIFFICULTY	LUCK
	5.91	4.33	4.55	4.19
ABILITY		1.58**	1.36**	1.72**
EFFORT			.22	.14
TASK DIFFICULTY				.36

\*\*p < .01

Scheffe Critical Differences: .05 = .61  
.01 = .80

<sup>2</sup>The split-plot factorial design (SPF-pr·quv) used in this study is taken from Chapter VIII of Kirk (1968). Breakdown of the analysis of variance into simple effects and the Scheffé method for post hoc



Figure 1. Means for Attribution Categories

Question 2: Do elementary major teacher-trainees and special education major trainees differentially attribute performance outcomes to different causal factors? The significant Major by Attribution (AE) interaction ( $F = 4.73$ ,  $p < .0034$ ) (Table I) indicates that elementary and special education major trainees differentially attribute performance outcomes to different causal factors. Analysis of the simple effect of Major (A) at the four levels of Attribution ( $e_1 = \text{ability}$ ,  $e_2 = \text{effort}$ ,  $e_3 = \text{task difficulty}$ , and  $e_4 = \text{luck}$ ) reveals that elementary

---

comparisons of means follow the procedures also outlined in Chapter VIII of Kirk (1968). Therefore, all subsequent references to statistical procedures are due to those outlined by Kirk and will not be referenced further.

education majors place greater importance on lucky guessing than do special education majors (Table III and Figure 2). The Scheffé post hoc comparisons of means (Table IV and Figure 2) indicate that, while special education majors' attributions to ability are higher than their attributions to effort, task difficulty, and luck, elementary education trainees' attributions to effort and task difficulty are also higher than their attributions to luck.

TABLE III  
SIMPLE EFFECTS BREAKDOWN FOR THE MAJOR  
BY ATTRIBUTION (AE) INTERACTION

SOURCE	SS	df	MS	F
E at a <sub>1</sub>	402.73	3	134.24	26.47**
E at a <sub>2</sub>	224.64	3	74.88	14.76**
E x Subj. W. Groups	1,156.22	228	5.07	
A at e <sub>1</sub>	1.01	1	1.01	.20
A at e <sub>2</sub>	14.88	1	14.88	2.87
A at e <sub>3</sub>	.45	1	.45	.09
A at e <sub>4</sub>	58.65	1	58.65	11.30**
Pooled Error		76	5.19	

\*\*p < .01

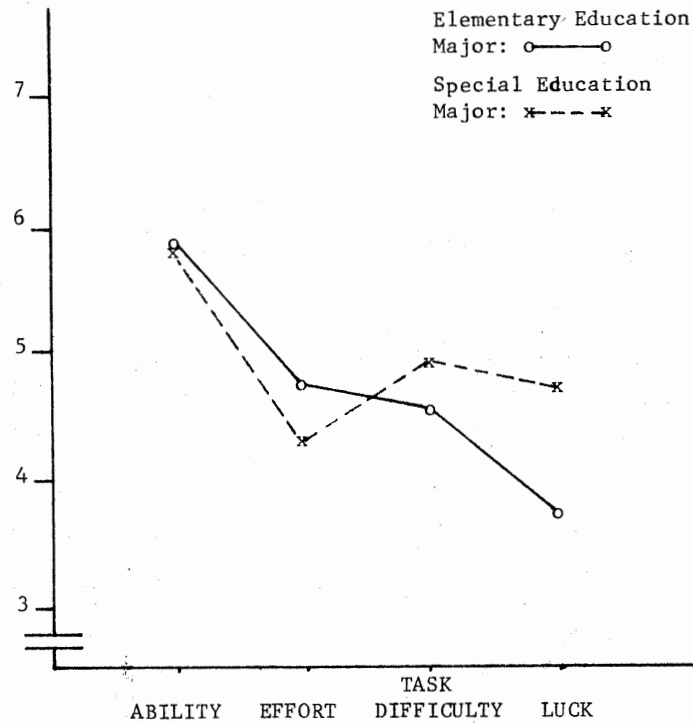


Figure 2. Means for Major by Attribution Categories (AE) Interaction

TABLE IV

MEANS AND SCHEFFÉ POST HOC COMPARISONS FOR THE MAJOR BY ATTRIBUTION (AE) INTERACTION

	TASK			
	ABILITY	EFFORT	DIFFICULTY	LUCK
ELEMENTARY EDUCATION MAJOR	5.97	4.76	4.51	3.76
Ability		1.21**	1.46**	2.21**
Effort			.25	1.00**
Task Difficulty				.75*
SPECIAL EDUCATION MAJOR	5.86	4.33	4.95	4.72
Ability		1.53**	1.27**	1.24**
Effort			.26	.29
Task Difficulty				.03

\* $p < .05$

\*\* $p < .01$

Scheffé Critical Differences: .05 = .71  
.01 = .86

Question 3: Do teacher-trainees attribute performance outcomes to different causal factors differentially for male students than female students? The non-significant BE (Sex x Attribution) interaction ( $F = .96, p < .05$ ) indicates that teacher-trainees' attributions for performance outcomes to different causal factors are the same for male and female students (Table I). However, the significant ABE (Major x Sex x Attribution) interaction ( $F = 3.62, p < .014$ ) indicates that when teacher-trainee major is taken into account, attributions for performance outcomes of male and female students are differentially made to different causal factors (Table I). Thus, analysis of the simple effect of B (Sex) at  $ae_{10}$  (Table V and Figure 3) reveals that elementary teacher-trainees place greater importance on lucky guessing for female students than they do for male students, whereas special education majors do not.



TABLE V

SIMPLE EFFECTS BREAKDOWN FOR THE MAJOR BY SEX OF  
STUDENT BY ATTRIBUTION (ABE) INTERACTION

SOURCE	SS	df	MS	F
AE at b <sub>1</sub>	16.47	3	5.49	3.03**
AE at b <sub>2</sub>	63.34	3	21.11	11.66**
Pooled Error		76	1.81	
B at ae <sub>11</sub>	.01	1	.01	.01
B at ae <sub>12</sub>	1.60	1	1.60	2.28
B at ae <sub>13</sub>	.40	1	.40	.57
B at ae <sub>14</sub>	8.10	1	8.10	11.56**
B at ae <sub>21</sub>	.31	1	.31	.44
B at ae <sub>22</sub>	.06	1	.06	.08
B at ae <sub>23</sub>	.03	1	.03	.04
B at ae <sub>24</sub>	1.41	1	1.41	2.01
Pooled Error		228	.70	
A at be <sub>11</sub>	1.06	1	1.06	.55
A at be <sub>12</sub>	3.09	1	3.09	2.02
A at be <sub>13</sub>	.01	1	.01	.00
A at be <sub>14</sub>	11.56	1	11.56	5.99*
A at be <sub>21</sub>	.16	1	.16	.08
A at be <sub>22</sub>	12.10	1	12.10	6.27*
A at be <sub>23</sub>	.76	1	.76	.39
A at be <sub>24</sub>	55.23	1	55.23	28.61**
Pooled Error		76	1.93	
E at ab <sub>11</sub>	169.28	3	56.43	31.17**
E at ab <sub>12</sub>	242.24	3	80.75	44.61**
E at ab <sub>21</sub>	108.23	3	36.08	19.93**
E at ab <sub>22</sub>	117.51	3	39.17	21.64**
Pooled Error		76	1.81	

\*p &lt; .05

\*\*p &lt; .01

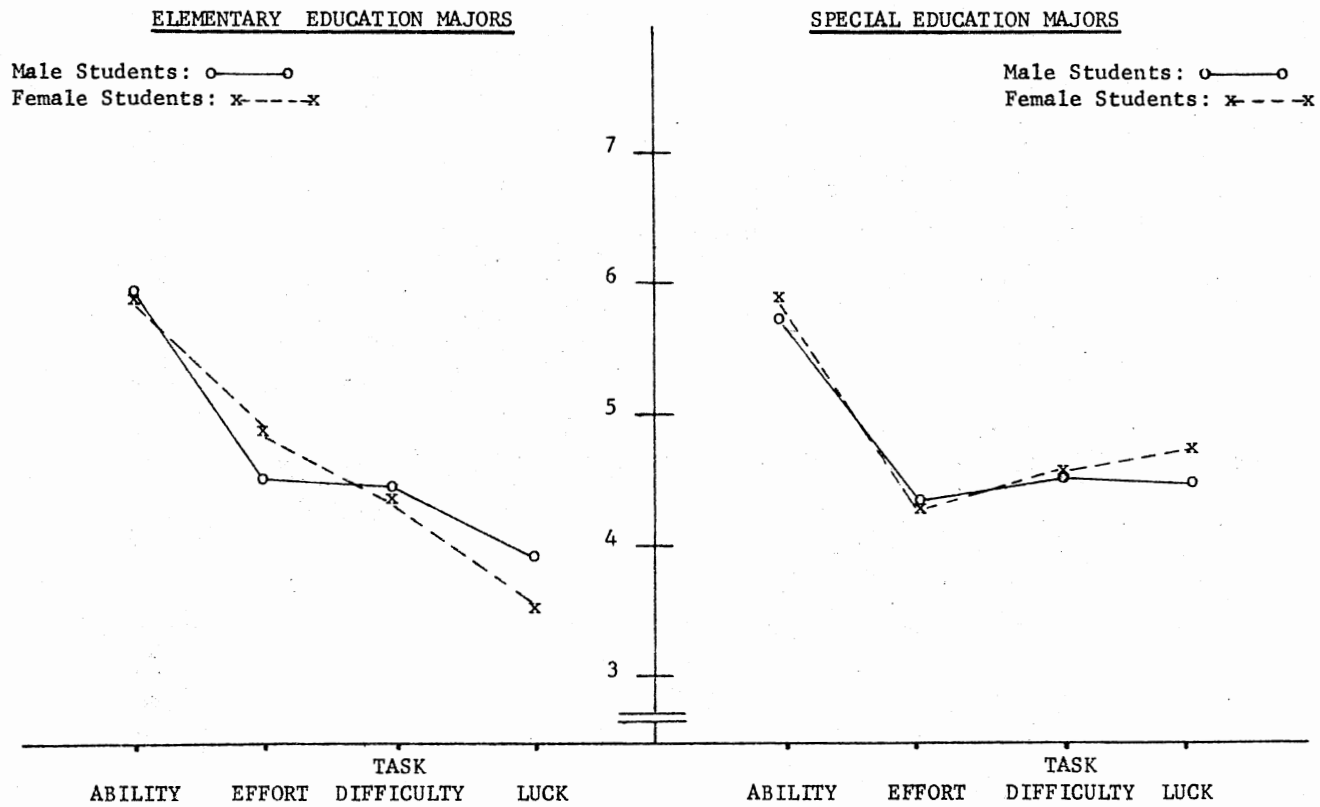


Figure 3. Means for Attributions by Elementary Education Majors and Special Education Majors for Male and Female Students

The simple effects of A (Major) at  $be_{jo}$  (Table V and Figure 4) indicate that, while elementary education trainees place greater importance on lucky guessing for both male and female students than do special education trainees, the elementary majors' attributions to effort are higher than special education trainees' for female students but not for male students.

Table V and Figure 4 show an analysis of the simple effects of E (Attribution) at  $ab_{ij}$  indicating that attributions to different causal factors are made by both elementary and special education majors for both male and female students. The Scheffé' post hoc comparisons of means (Table VI and Figure 4) reveal that special education trainees' attributions to ability are higher than their attributions to effort, task difficulty, or luck. This result holds for both male and female students. This result also occurs for the attributions of elementary education trainees. However, for these elementary majors, attributions to task difficulty are higher than their attributions to luck for female students but not for male students.

Question 4: Do teacher-trainees attribute performance outcomes to different causal factors differentially for students labeled normal versus students labeled gifted? The significant CE (Label x Attribution) interaction ( $F = 19.21, p < .0001$ ) indicates that teacher-trainees attribute performance outcomes to different causal factors differentially for gifted and normal labeled students (Table I). Analysis of the simple effect of C (Label) at the four levels of E (ability, effort, task difficulty, and luck) indicates that teacher-trainees' attributions to ability are higher for gifted labeled students than for normal labeled students (Table VII and Figure 5). However, attributions to effort and

task difficulty are higher for normal labeled students than for gifted labeled students.

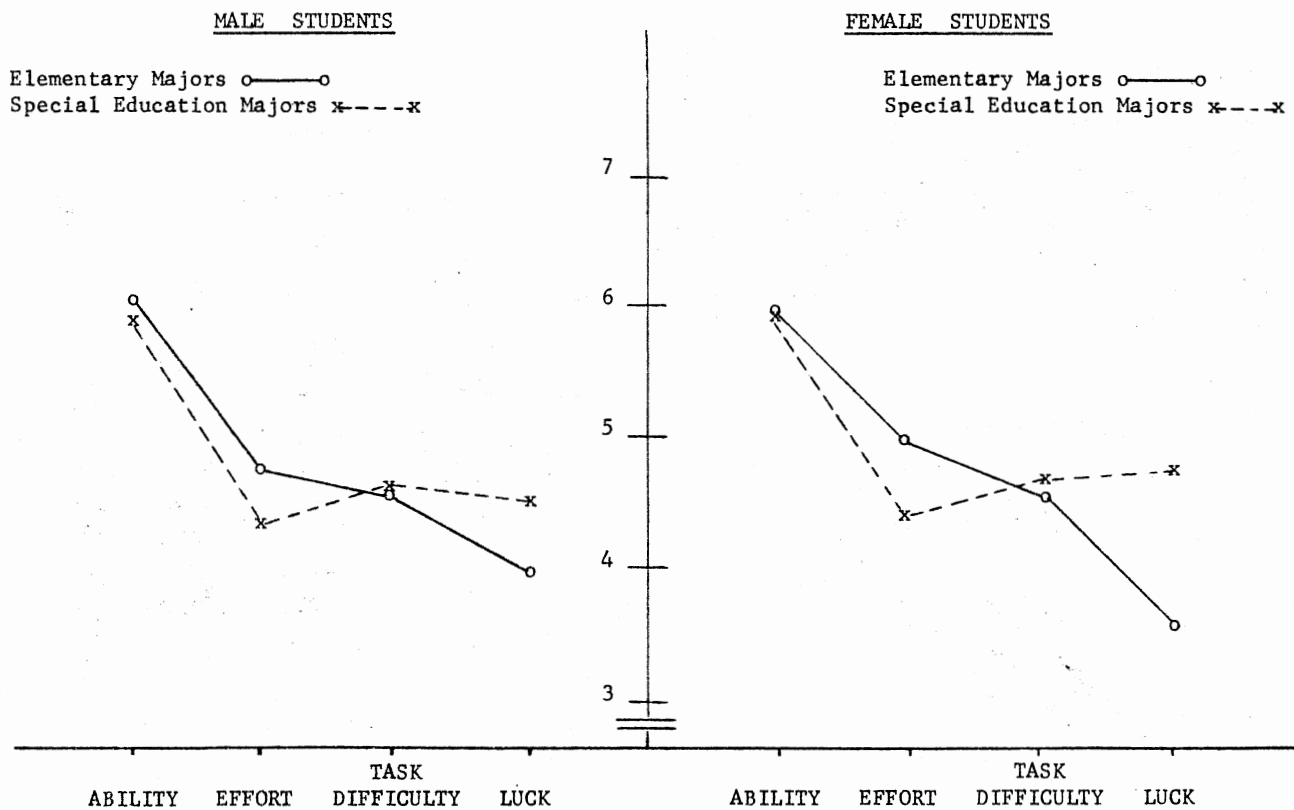


Figure 4. Means for the Major by Sex of Student by Attribution Categories (ABE) Interaction

TABLE VI  
 MEANS AND SCHEFFÉ POST HOC COMPARISONS  
 FOR THE MAJOR BY SEX OF STUDENT BY  
 ATTRIBUTION (ABE) INTERACTION

	ABILITY	EFFORT	TASK DIFFICULTY	LUCK
<hr/>				
ELEMENTARY EDUCATION MAJOR x MALE STUDENT	5.97	4.66	4.56	3.99
Ability		1.31	1.41**	1.99**
Effort			.10	.68
Task Difficulty				.58
<hr/>				
SPECIAL EDUCATION MAJOR x MALE STUDENT	5.81	4.35	4.57	4.52
Ability		1.46**	1.24*	1.29*
Effort			.22	.18
Task Difficulty				.05
<hr/>				
ELEMENTARY EDUCATION MAJOR x FEMALE STUDENT	5.96	4.86	4.46	3.54
Ability		1.10*	1.50*	2.34**
Effort			.40	1.33*
Task Difficulty				.93
<hr/>				
SPECIAL EDUCATION MAJOR x FEMALE STUDENT	5.90	4.31	4.60	4.71
Ability		1.59**	1.30*	1.19*
Effort			.29	.40
Task Difficulty				.11
<hr/>				

\* p < .05

\*\*p < .01

Scheffé Critical Differences: .05 = 1.07  
 .01 = 1.31

Analysis of the simple effect of E at the two levels of c ( $c_1$  = normal and  $c_2$  = gifted) indicates that attributions for both gifted and normal labeled students are made to different causal factors (Table VII and Figure 5). Scheffé post hoc comparisons of means (Table VIII) reveal that for gifted labeled students, attributions to ability are higher than attributions to effort, task difficulty, and luck. However, for normal labeled students, attributions to ability and task difficulty are higher than attributions to luck.

TABLE VII  
SIMPLE EFFECTS BREAKDOWN FOR THE LABEL  
BY ATTRIBUTION (CE) INTERACTION

SOURCE	SS	df	MS	F
E at c <sub>1</sub>	741.87	3	247.29	48.87**
E at c <sub>2</sub>	105.78	3	35.26	6.95**
E x Subj. W. Groups		228	5.07	
C at e <sub>1</sub>	183.01	1	183.01	35.24**
C at e <sub>2</sub>	29.40	1	29.40	5.66*
C at e <sub>3</sub>	78.01	1	78.01	15.02**
C at e <sub>4</sub>	1.95	1	1.95	.38
Pooled Error	5.29	228		

\*p < .05

\*\*p < .01

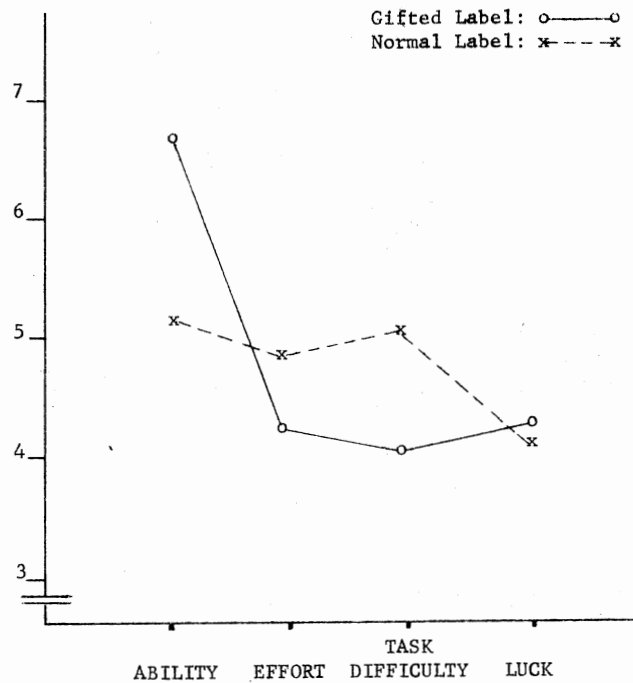


Figure 5. Means for the Label by  
Attribution Categories  
(CE) Interaction

TABLE VIII  
 MEANS AND SCHEFFÉ POST HOC COMPARISONS FOR THE  
 LABEL BY ATTRIBUTION (CE) INTERACTION

	TASK			
	ABILITY	EFFORT	DIFFICULTY	LUCK
GIFTED LABEL	6.67	4.24	4.06	4.27
Ability		2.42**	2.61**	2.38**
Effort			.187	.025
Task Difficulty				.212
NORMAL LABEL	5.16	4.85	5.04	4.11
Ability		.306	.112	1.044**
Effort			.194	.737
Task Difficulty				.931*

\*  $p < .05$

\*\* $p < .01$

Scheffé Critical Differences: .05 = .90  
 .01 = 1.18

Although the answer to research question 4 is clearly yes, the presence of significant higher level interactions indicates that the CE (Label x Attribution) interaction must be interpreted in light of the significant CDE (Label x Outcome x Attribution) and the BCDE (Sex of Student x Label x Outcome x Attribution) interaction. This clarification will follow presentation of the results for research question 5.

Question 5: Do teacher-trainees attribute performance outcomes to different causal factors differently for children who perform at different levels? The significant DE (Performance Outcome x Attribution) interaction ( $F = 94.72$ ,  $p < .0001$ ) indicates that teacher-trainees attribute performance outcomes to different causal factors differentially for children who perform at different levels (Success/Failure) (Table I). Analysis of the simple effect of D (Performance Outcomes) at the four levels of E (Attribution) indicates that attributions to the two internal factors (ability and effort) are higher for successful per-

formance while attributions to task difficulty are higher for failure conditions, and lucky guessing is seen as important for success but not for failure (Table IX and Figure 6).

Analysis of the simple effects of E (Attributions) at the two levels of D (Success Outcomes and Failure Outcomes) indicates that teacher-trainees attribute both success and failure outcomes to different causal factors (Table IX). The Scheffé post hoc comparisons of means indicate that for the success outcome, attribution to ability and effort are higher than attributions to task difficulty and luck (Table X and Figure 6). However, for the failure condition, attributions to effort are lower than attributions to the three other causal factors.

TABLE IX  
SIMPLE EFFECTS BREAKDOWN FOR THE PERFORMANCE  
OUTCOME BY ATTRIBUTION (DE) INTERACTION

SOURCE	SS	df	MS	F
E at d <sub>1</sub>	1161.59	3	387.20	95.30**
E at d <sub>2</sub>	452.90	3	150.97	37.16**
Pooled Error		76	4.06	
D at e <sub>1</sub>	255.61	1	255.61	63.44**
D at e <sub>2</sub>	784.38	1	784.38	194.68**
D at e <sub>3</sub>	22.05	1	22.05	5.47*
D at e <sub>4</sub>	169.65	1	169.65	42.11**
Pooled Error		228	4.03	

\*p < .05

\*\*p < .01



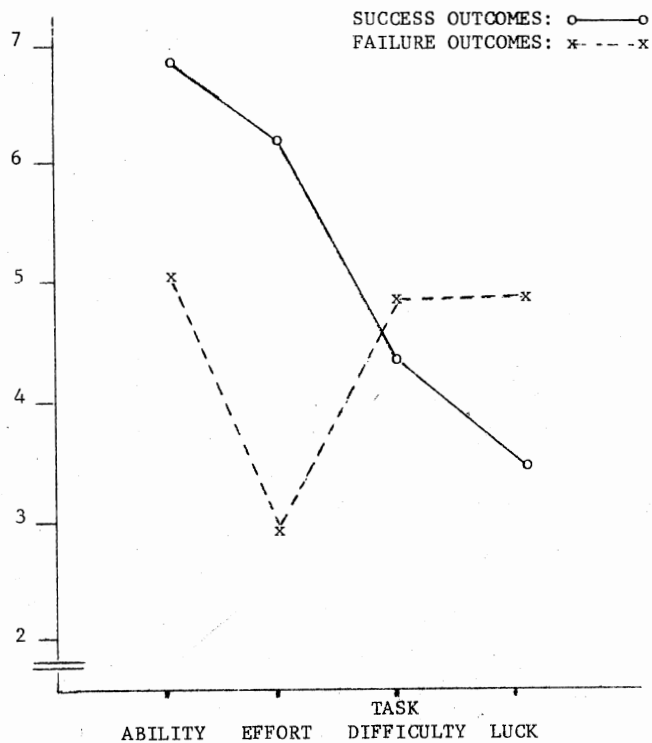


Figure 6. Means for the Performance Outcomes by Attribution Categories (DE) Interaction

TABLE X

MEANS FOR THE PERFORMANCE OUTCOME BY ATTRIBUTION INTERACTION AND SCHEFFÉ POST HOC COMPARISONS

	TASK			
	ABILITY	EFFORT	DIFFICULTY	LUCK
SUCCESS	6.81	6.11	4.29	3.46
FAILURE	5.02	2.92	4.81	4.92

SCHEFFÉ POST HOC COMPARISONS

Internal vs. External (SUCCESS)

$$F_{(3,228)} = \frac{\left( \frac{6.81 + 6.11}{2} - \frac{4.29 + 3.46}{2} \right)^2}{5.071 \left( \frac{1}{160} \right)} = 210.84, p < .01$$

Effort vs. Ability, Task Difficulty and Luck (FAILURE)

$$F_{(3,228)} = \frac{\left( \frac{5.02 + 4.81 + 4.92}{3} - 2.92 \right)^2}{5.071 \left( \frac{1}{480} + \frac{1}{160} \right)} = 88.76, p < .01$$

As was the case with research question 4, the presence of significant higher level interactions indicates that the DE (Performance Outcome x Attribution) interaction must also be interpreted in light of the significant CDE (Label x Outcome x Attribution) and the BCDE (Sex of Student x Label x Outcome x Attribution) interaction. This discussion now follows.

Label by Outcome by Attribution  
(CDE) Interaction

The simple effect of CE at the two levels of d indicates the presence of a CE interaction at both levels of d (Table XI).

TABLE XI  
SIMPLE EFFECTS BREAKDOWN FOR THE LABEL BY OUTCOME BY  
ATTRIBUTION (CDE) INTERACTION SHOWING THE NON-  
REPLICATION OF THE OUTCOME BY ATTRIBUTION (DE)  
INTERACTION AT THE TWO LEVELS OF LABEL  
( $c_1$  = GIFTED AND  $c_2$  = NORMAL)

SOURCE	SS	df	MS	F
CE at $d_1$	71.05	3	23.69	5.83**
CE at $d_2$	261.28	3	87.09	21.44**
Pooled Error		228	4.06	
C at $de_{11}$	39.06	1	39.06	8.47**
C at $de_{12}$	21.03	1	21.03	4.56*
C at $de_{13}$	12.10	1	12.10	2.62
C at $de_{14}$	.63	1	.63	.14
C at $de_{21}$	166.06	1	166.06	36.01**
C at $de_{22}$	9.51	1	9.51	2.06
C at $de_{23}$	81.23	1	81.23	17.62**
C at $de_{24}$	7.66	1	7.66	1.66
Pooled Error		228	4.61	

\*  $p < .05$

\*\* $p < .01$

Table XI and Figure 7 show the simple effect of C at  $de_{10}$ , indicating that for success outcome, attributions to ability are higher for gifted labeled students than for normal labeled students, but the opposite result is found for attribution to effort. Attribution to task difficulty and luck are not different for gifted and normal labeled students. For the failure conditions, attributions to ability are also higher for gifted labeled students than for normal labeled students, while attributions to task difficulty are higher for normal labeled than for gifted. Attribution to effort and luck are not different for gifted and normal labeled students in the failure condition (Figure 7).

The simple effects of DE at the two levels of c indicate a DE interaction at both levels of c (Table XII). The simple effect of D at  $ce_{k0}$  (Table XII and Figure 8) indicates that for gifted labeled students, attributions to ability and effort are higher for success outcomes than for failure outcomes, while guessing is important for success but not for failure. A similar result occurs for normal labeled students where attributions to ability and effort are higher for success outcomes than for failure outcomes. However, while for both gifted and normal labeled students, guessing is important for success but not for failure, for normal labeled students only attributions to task difficulty are higher for failure outcomes than for success outcomes (Figure 8).

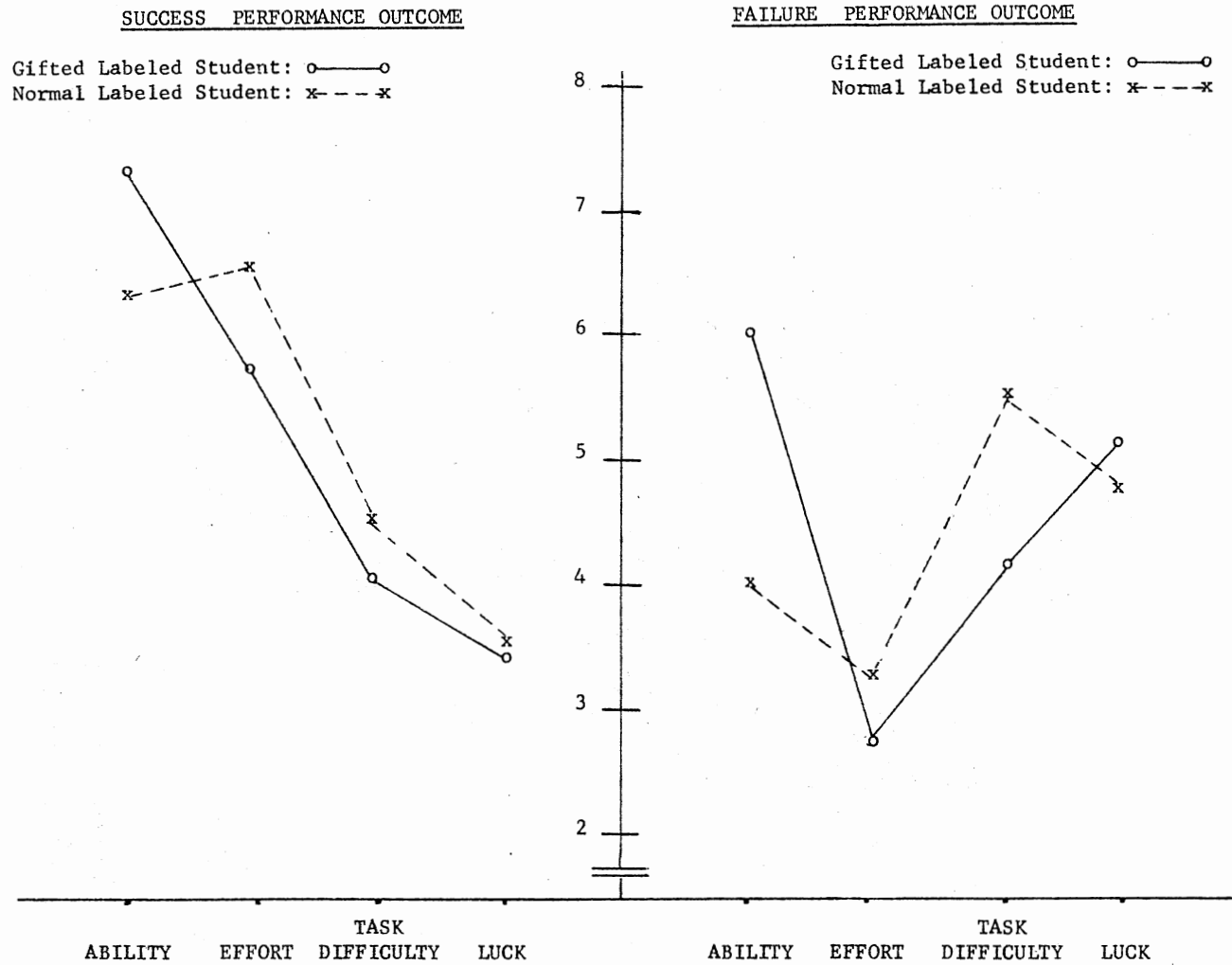


Figure 7. Means for Attributions for Success and Failure Performance Outcomes of Students Labeled Gifted and Normal (CDE) Interaction

TABLE XII

SIMPLE EFFECTS BREAKDOWN FOR THE LABEL BY OUTCOME BY  
 ATTRIBUTION (CDE) INTERACTION SHOWING THE NON-  
 REPLICATION OF THE OUTCOME BY ATTRIBUTION (DE)  
 INTERACTION AT THE TWO LEVELS OF LABEL  
 ( $c_1$  = GIFTED AND  $c_2$  = NORMAL)

SOURCE	SS	df	MS	F
DE at $c_1$	487.80	3	162.60	43.63**
DE at $c_2$	611.38	3	203.79	54.68**
DE x Subj. W. Groups	849.76	228	3.73	
D at $ce_{11}$	63.76	1	63.76	15.82**
D at $ce_{12}$	363.01	1	363.01	90.08**
D at $ce_{13}$	.31	1	.31	.08
D at $ce_{14}$	120.76	1	120.76	29.96**
D at $ce_{21}$	213.91	1	213.91	53.08**
D at $ce_{22}$	422.50	1	422.50	104.84**
D at $ce_{23}$	37.06	1	37.06	9.19**
D at $ce_{24}$	55.23	1	55.23	13.70**
Pooled Error		228	4.03	

\*  $p < .05$ \*\* $p < .01$ 

TABLE XIII

SIMPLE EFFECTS BREAKDOWN FOR THE LABEL BY  
 OUTCOME BY ATTRIBUTION (CDE) INTERACTION

SOURCE	SS	df	MS	F
E at $cd_{11}$	746.73	3	248.91	61.26**
E at $cd_{12}$	482.93	3	160.98	39.62**
E at $cd_{21}$	485.91	3	161.97	39.86**
E at $cd_{22}$	231.25	3	77.08	18.97**
Pooled Error		228	4.06	

\*\* $p < .01$

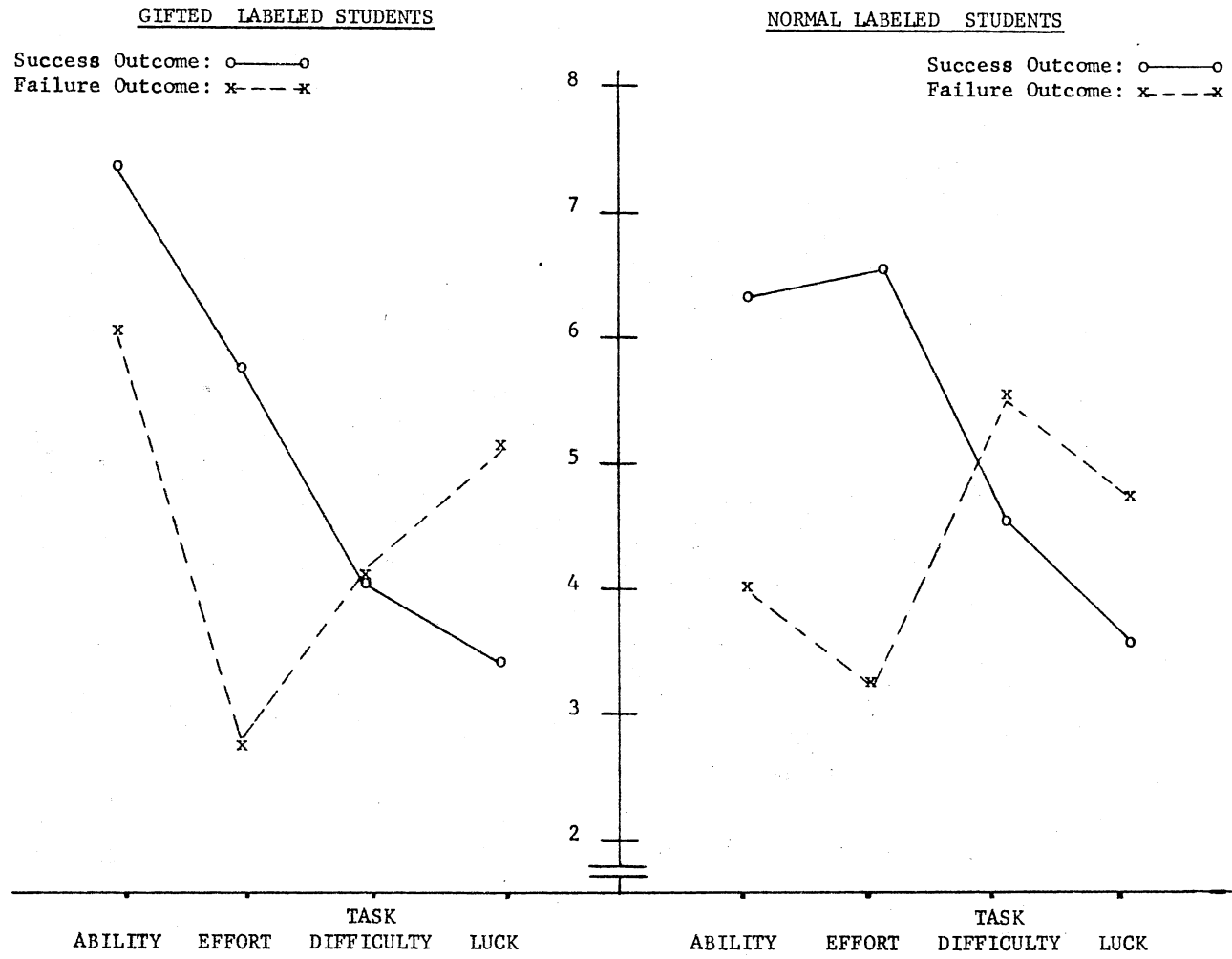


Figure 8. Means for Attributions for Students Labeled Gifted and Normal for Success and Failure Performance Outcomes (CDE) Interactions

The simple effects of E at  $d_{kl}$  (Table XIII) indicate that attributions are differentially made to different attribution categories for each of the four combinations of label and performance outcomes. Table XV presents Scheffé post hoc comparisons of the means shown in Table XIV (also reference Figure 8). For both gifted/success and normal/success conditions, attributions to the two internal factors (ability and effort) are higher than the attributions to the two external factors (task difficulty and luck). However, the opposite result obtains for the normal/failure condition but not the gifted/failure condition. Additionally, in the gifted/failure and normal/failure conditions, attribution to effort are lower than attributions to the three other causal factors. However, in the normal/success conditions, the opposite result occurs.

TABLE XIV  
MEANS FOR THE LABEL BY PERFORMANCE OUTCOME  
BY ATTRIBUTION (CDE) INTERACTION

	ABILITY	EFFORT	TASK DIFFICULTY	LUCK
<u>GIFTED</u>				
Success	7.30	5.75	4.01	3.40
Failure	6.04	2.74	4.10	5.14
<u>NORMAL</u>				
Success	6.31	6.48	4.56	3.53
Failure	4.00	3.23	5.53	4.70

TABLE XV

SCHEFFÉ POST HOC COMPARISONS OF MEANS FOR  
THE LABEL BY PERFORMANCE OUTCOME BY  
ATTRIBUTION (CDE) INTERACTION

Internal vs. External

GIFTED/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{7.30 + 5.75}{2} - \frac{4.01 + 3.40}{2}\right)^2}{4.063 \left(\frac{1}{80}\right)} = 155.33 \quad p < .01$$

NORMAL/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{6.31 + 6.48}{2} - \frac{4.56 + 3.53}{2}\right)^2}{4.063 \left(\frac{1}{80}\right)} = 108.28 \quad p < .01$$

NORMAL/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{4.00 + 3.23}{2} - \frac{5.53 + 4.7}{2}\right)^2}{4.063 \left(\frac{1}{80}\right)} = 44.12 \quad p < .01$$

Effort vs. Ability, Task Difficulty and Luck

GIFTED/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{6.04 + 4.10 + 5.14}{3} - 2.74\right)^2}{4.063 \left(\frac{1}{480} + \frac{1}{160}\right)} = 162.89 \quad p < .01$$

NORMAL/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{4.00 + 5.52 + 4.70}{3} - 3.23\right)^2}{4.063 \left(\frac{1}{480} + \frac{1}{160}\right)} = 67.36 \quad p < .01$$

NORMAL/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{6.31 + 4.56 + 3.53}{3} - 6.48\right)^2}{4.063 \left(\frac{1}{480} + \frac{1}{160}\right)} = 83.01 \quad p < .01$$

Sex of Student by Label by Outcome by

Attribution (BCDE) Interaction

The simple effects of CDE are significant at  $b_1$  (male) but not  $b_2$  (female) indicating the presence of a CDE interaction for male students but not for female students (Table XVI). Simple effects of B at  $cde_{k10}$



indicate that for the normal/failure conditions, attributions to ability are higher for females than for males (Table XVI and Figure 9).

TABLE XVI

SIMPLE EFFECTS BREAKDOWN FOR THE SEX OF STUDENT BY LABEL BY OUTCOME BY ATTRIBUTION (BCDE) INTERACTION SHOWING THE NON-REPLICATION OF THE LABEL BY OUTCOME BY ATTRIBUTION (CDE) INTERACTION AT THE TWO LEVELS OF SEX OF STUDENT  
( $b_1$  = MALE AND  $b_2$  = FEMALE)

SOURCE	SS	df	MS	F
CDE at $b_1$	40.970	3	13.650	4.58*
CDE at $b_2$	8.508	3	2.836	.95
Pooled Error		76#	2.98	
B at cde <sub>111</sub>	.20	1	.20	.27
B at cde <sub>112</sub>	1.25	1	1.25	1.68
B at cde <sub>113</sub>	1.001	1	1.001	1.35
B at cde <sub>114</sub>	1.250	1	1.250	1.68
B at cde <sub>121</sub>	2.112	1	2.112	2.85
B at cde <sub>122</sub>	1.012	1	1.012	1.36
B at cde <sub>123</sub>	1.250	1	1.250	1.68
B at cde <sub>124</sub>	.112	1	.112	.15
B at cde <sub>211</sub>	.1125	1	.1125	.15
B at cde <sub>212</sub>	.050	1	.050	.06
B at cde <sub>213</sub>	.3125	1	.3125	.42
B at cde <sub>214</sub>	.050	1	.050	.06
B at cde <sub>221</sub>	4.050	1	4.050	5.46*
B at cde <sub>222</sub>	.800	1	.800	1.08
B at cde <sub>223</sub>	1.800	1	1.800	2.43
B at cde <sub>224</sub>	1.250	1	1.250	1.68
BDE x Subj. W. Groups		228	.742	

\*  $p < .05$

# Conservative df

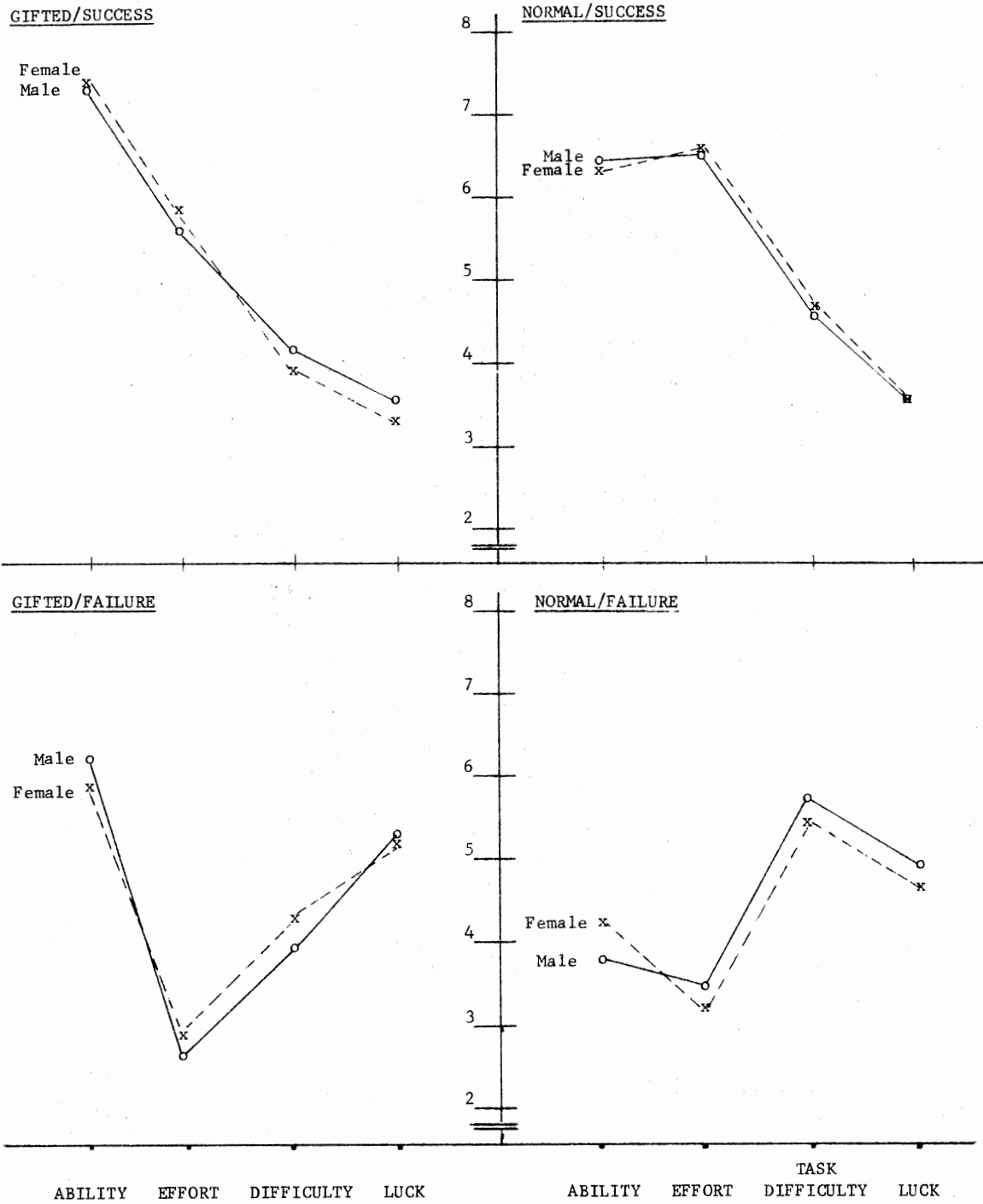


Figure 9. Means for the Sex of Student by Label by Performance Outcome by Attribution (BCDE) Interaction

Table XVII shows the simple effects of CE at  $bd_{j1}$ . A CE interaction is indicated for male/success, male/failure, female/success, and female/failure conditions. Examination of the simple effects of c at  $bde_{j10}$  (Table XVII and Figure 10) reveals that for the male/success conditions, attributions to effort are higher for normal labeled students than those labeled gifted. For the male/failure, female/success, and female/failure conditions, attributions to ability are higher for gifted labeled students than for normal labeled students, while attributions to task difficulty are higher for students labeled normal than for those labeled gifted.

Simple effects of DE at  $bc_{jk}$  (Table XVIII) indicate that the DE interaction is present for the male/gifted, male/normal, female/gifted, and female/normal conditions. Examination of the simple effect of D at  $bce_{jko}$  (Table XVIII and Figure 11) indicates that for both the male and female students labeled gifted, attributions to effort are higher for the success conditions than for the failure conditions, attributions to task difficulty are the same for success and failure conditions, but guessing is important for success but not for failure. For both male and female students labeled normal, attribution to ability and attribution to effort are higher for success outcomes than for failure outcomes, while attributions to task difficulty are higher for failure outcomes than for success outcomes and guessing is important for success but not for failure.

TABLE XVII

SIMPLE EFFECTS BREAKDOWN FOR THE SEX OF STUDENT BY LABEL BY OUTCOME BY ATTRIBUTION (BCDE) INTERACTION SHOWING THE NON-REPLICATION OF THE LABEL BY ATTRIBUTION (CE) INTERACTION FOR THE FOUR COMBINATIONS OF SEX OF STUDENT ( $b_1$  = MALE AND  $b_2$  = FEMALE) AND PERFORMANCE OUTCOME ( $d_1$  = SUCCESS AND  $d_2$  = FAILURE)

SOURCE	SS	df	MS	F
CE at $bd_{11}$	32.26	3	10.75	4.19*
CE at $bd_{12}$	186.96	3	62.32	24.30**
CE at $bd_{21}$	41.44	3	13.81	5.38*
CE at $bd_{22}$	85.11	3	33.18	28.37**
Pooled Error		228#	2.57	
C at $bde_{111}$	16.20	1	16.20	6.09*
C at $bde_{112}$	13.61	1	13.61	5.12*
C at $bde_{113}$	2.81	1	2.81	1.06
C at $bde_{114}$	.01	1	.01	.004
C at $bde_{121}$	117.61	1	117.61	44.21**
C at $bde_{122}$	9.80	1	9.80	3.68
C at $bde_{123}$	57.80	1	57.80	21.73**
C at $bde_{124}$	2.45	1	2.45	.92
C at $bde_{211}$	23.11	1	23.11	8.69**
C at $bde_{212}$	7.81	1	7.81	2.94
C at $bde_{213}$	10.51	1	10.51	3.95*
C at $bde_{214}$	1.51	1	1.51	.56
C at $bde_{221}$	54.45	1	54.45	20.47**
C at $bde_{222}$	1.51	1	1.51	.56
C at $bde_{223}$	26.45	1	26.45	9.94**
C at $bde_{224}$	5.51	1	5.51	2.07
Pooled Error		228#	2.66	

\*p &lt; .05

\*\*p &lt; .01

# Conservative df

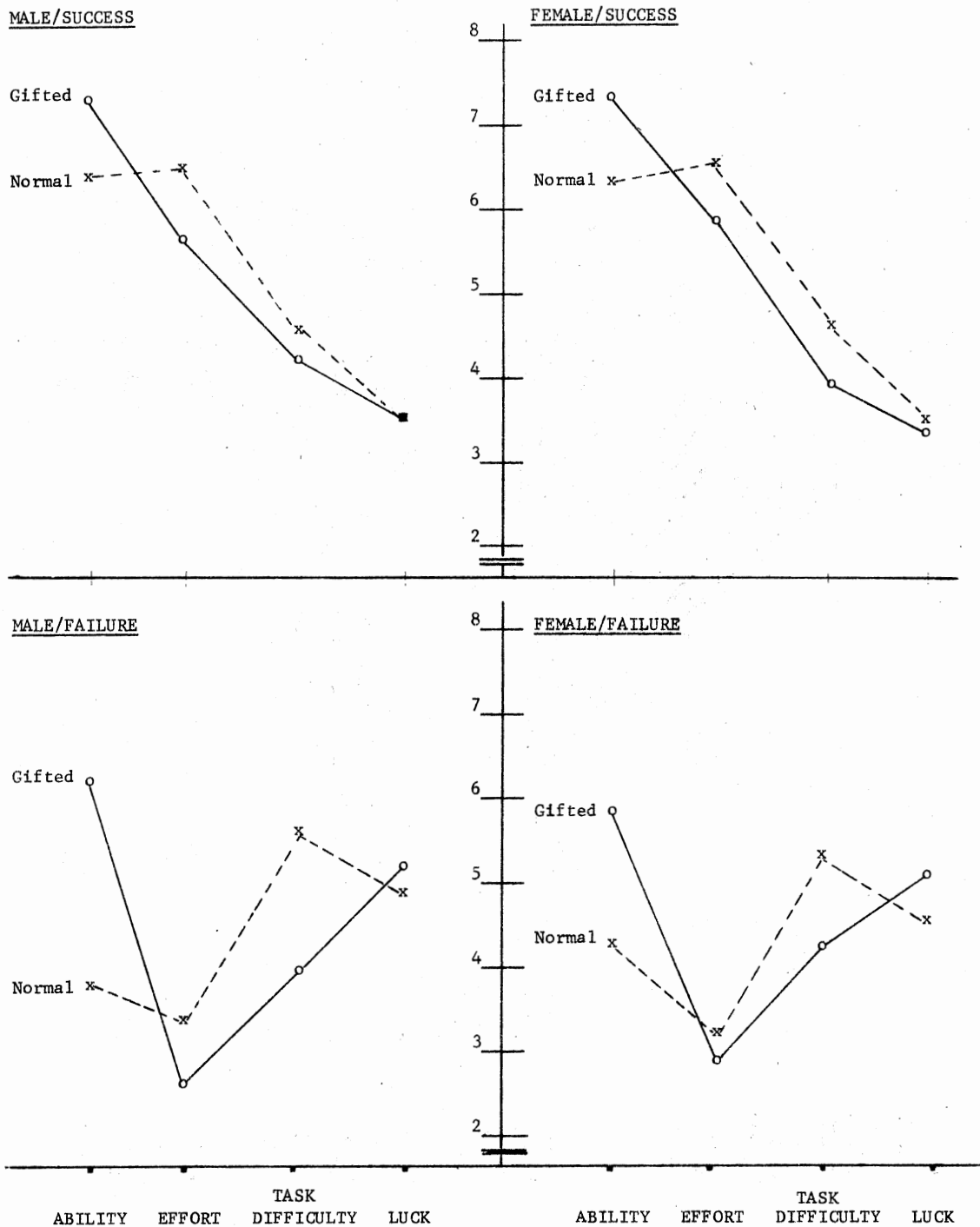


Figure 10. Means for the Sex by Label by Performance Outcomes by Attribution (BCDE) Interaction showing the Relative Similarity of Attribution for Both Male and Female, Gifted and Normal Labeled Students in the Success, but not Failure, Conditions

TABLE XVIII

SIMPLE EFFECTS BREAKDOWN FOR THE SEX OF STUDENT BY LABEL BY OUTCOME BY ATTRIBUTION (BCDE) INTERACTION SHOWING THE NON-REPLICATION OF THE OUTCOME BY ATTRIBUTION (DE) INTERACTION FOR THE FOUR COMBINATIONS OF SEX OF STUDENT ( $b_1$  = MALE AND  $b_2$  = FEMALE) AND LABEL ( $c_1$  = GIFTED AND  $c_2$  = NORMAL)

SOURCE	SS	df	MS	F
DE at bc <sub>11</sub>	224.44	3	74.81	25.10**
DE at bc <sub>12</sub>	339.45	3	113.15	37.97**
DE at bc <sub>13</sub>	267.64	3	89.21	29.94**
DE at bc <sub>14</sub>	277.52	3	92.51	31.04**
Pooled Error		228#	2.98	
D at bce <sub>111</sub>	22.05	1	22.05	9.30**
D at bce <sub>112</sub>	180.00	1	180.00	75.95**
D at bce <sub>113</sub>	.45	1	.45	.189
D at bce <sub>114</sub>	54.45	1	54.45	22.97**
D at bce <sub>121</sub>	132.61	1	132.61	55.95**
D at bce <sub>122</sub>	195.31	1	195.31	82.41**
D at bce <sub>123</sub>	27.61	1	27.61	11.65**
D at bce <sub>124</sub>	35.11	1	35.11	14.81**
D at bce <sub>211</sub>	43.51	1	43.51	18.36**
D at bce <sub>212</sub>	183.01	1	183.01	77.22**
D at bce <sub>213</sub>	2.112	1	2.112	.89
D at bce <sub>214</sub>	66.61	1	66.61	28.11**
D at bce <sub>221</sub>	84.05	1	84.05	35.46**
D at bce <sub>222</sub>	227.81	1	227.81	96.12**
D at bce <sub>223</sub>	11.25	1	11.25	4.75*
D at bce <sub>224</sub>	21.01	1	21.01	8.86**
Pooled Error		228#	2.37	

\*  $p < .05$ \*\*  $p < .01$ 

# Conservative df

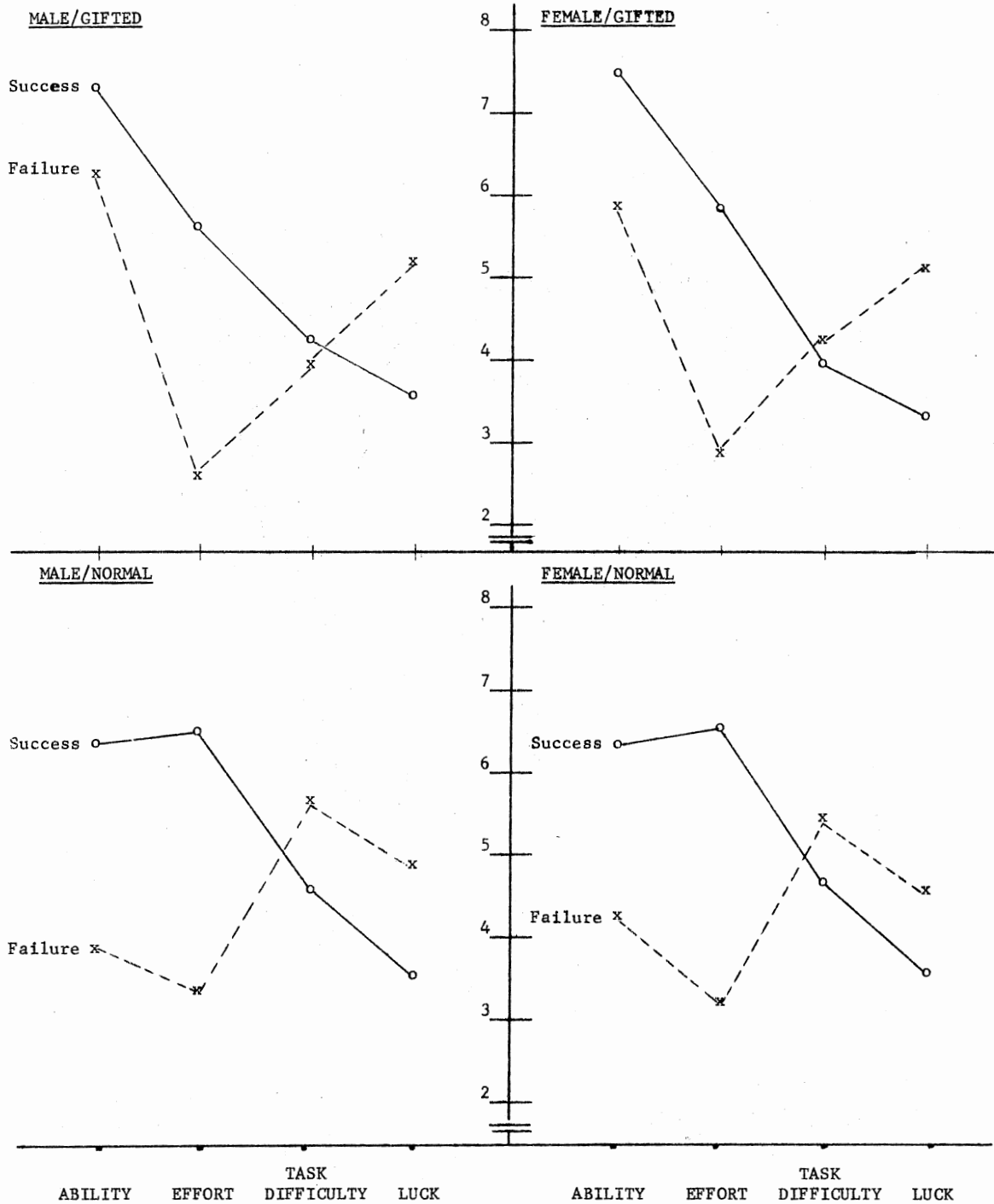


Figure 11. Means for the Sex by Label by Performance Outcomes by Attribution (BCDE) Interaction Showing the Ability/Effort Difference for Gifted/Failure and the Task Difficulty Difference Between Success and Failure Conditions for Normal Labeled Students

The simple effect of E at  $bcd_{jkl}$ , as shown in Table XIX, indicates that attributions are made to different causal factors for each combination of Sex of Student, Label and Performance outcome. Table XXI represents Scheffé' post hoc comparisons of the means shown in Table XX. These comparisons indicate that for the male/gifted/success, male/normal/success, female/gifted/success and female/normal/success conditions, attributions to the two internal factors (ability and effort) are higher than are the attributions to the two external factors (task difficulty and luck) (Figure 11). For the male/normal/failure and female/normal/failure conditions, the opposite result occurs, in that the attributions to the two external factors are higher than are the attributions to the two internal factors. Additionally, for both male and female students labeled gifted in failure conditions, attributions to effort are lower than attributions to the other three causal factors.

TABLE XIX

SIMPLE EFFECTS BREAKDOWN FOR THE  
SEX OF STUDENT BY LABEL BY  
OUTCOME BY ATTRIBUTION  
(BCDE) INTERACTION

SOURCE	SS	df	MS	F
E at $bcd_{111}$	333.02	3	111.00	43.36**
E at $bcd_{112}$	285.47	3	95.16	37.17**
E at $bcd_{113}$	250.60	3	83.53	32.63**
E at $bcd_{114}$	134.10	3	44.70	17.46**
E at $bcd_{211}$	417.35	3	139.12	54.34**
E at $bcd_{212}$	201.92	3	67.31	26.29**
E at $bcd_{213}$	235.72	3	78.57	30.69**
E at $bcd_{214}$	104.60	3	34.87	13.62**
Pooled Error		228#	2.56	

\*  $p < .05$ \*\* $p < .01$ 

# Conservative df



TABLE XX

MEANS FOR THE SEX OF STUDENT BY LABEL BY PERFORMANCE  
OUTCOMES BY ATTRIBUTION (BCDE) INTERACTION

	ABILITY	EFFORT	TASK DIFFICULTY	LUCK
<u>MALE</u>				
GIFTED:				
Success	7.25	5.62	4.12	3.52
Failure	6.20	2.62	3.97	5.17
NORMAL:				
Success	6.35	6.45	4.50	3.50
Failure	3.77	3.32	5.67	4.82
<u>FEMALE</u>				
GIFTED:				
Success	7.35	5.87	3.90	3.27
Failure	5.87	2.85	4.22	5.10
NORMAL:				
Success	6.27	6.50	4.62	3.55
Failure	4.22	3.12	5.37	4.57

TABLE XXI

SCHEFFÉ POST HOC COMPARISONS FOR THE SEX OF STUDENT  
BY LABEL BY PERFORMANCE OUTCOMES BY  
ATTRIBUTION (BCDE) INTERACTION

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Internal vs. External

## MALE:

GIFTED/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{7.25 + 5.62}{2} - \frac{4.12 + 3.52}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 106.5 \quad p < .01$$

NORMAL/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{6.35 + 6.45}{2} - \frac{4.5 + 3.5}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 90.0 \quad p < .01$$

NORMAL/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{7.35 + 5.87}{2} - \frac{3.90 + 3.27}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 142.98 \quad p < .01$$

## FEMALE:

GIFTED/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{6.27 + 6.50}{2} - \frac{4.62 + 3.55}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 82.66 \quad p < .01$$

NORMAL/SUCCESS

$$F_{(3,228)} = \frac{\left(\frac{3.77 + 3.32}{2} - \frac{5.67 + 4.82}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 45.16 \quad p < .01$$

NORMAL/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{4.22 + 3.12}{2} - \frac{5.37 + 4.57}{2}\right)^2}{2.56\left(\frac{1}{40}\right)} = 26.41 \quad p < .01$$

---

Effort vs. Ability, Task Difficulty and Luck

## MALE:

GIFTED/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{6.20 + 3.97 + 5.17}{3} - 2.62\right)^2}{2.56\left(\frac{1}{40} + \frac{1}{120}\right)} = 73.14 \quad p < .01$$

## FEMALE:

GIFTED/FAILURE

$$F_{(3,228)} = \frac{\left(\frac{5.87 + 4.22 + 5.10}{3} - 2.85\right)^2}{2.56\left(\frac{1}{40} + \frac{1}{120}\right)} = 57.63 \quad p < .01$$


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## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Summary of the Investigation

This study examined the possible differences in the causal attributions ascribed to Success and Failure performance outcomes by elementary education majors and special education majors as they may be effected by the labels of Normal and Gifted used to describe Male and Female elementary students. Specifically, a major purpose of this study was to examine the possible influences which student characteristics (i.e., male/female, normal label/gifted label, and successful performance outcomes/failure performance outcomes) may have on the causal attributions made by the particular groups of teacher-trainees.

Attribution theory (Heider, 1958; Kelly, 1973; Weiner, 1974 and 1976) provided the basic perspective from which to observe any differences that may exist between regular elementary education majors and special education majors in the causal factors (ability, effort, task difficulty, or luck) which they perceive to differentially explain or influence the performance outcomes of students who have been labeled either gifted or normal. The variable aspect of these labels, as they may influence teachers' decisions and their assessments of a student's performance is an important component of this study. As noted previously, the interaction between a teacher's causal attribution of the student's performance and the teacher's behavior toward that student

has been demonstrated in the literature (Weiner and Kukla, 1970; Rest and Weiner, 1972). Therefore, due to inherent ethical concerns, this study utilized hypothetical students who were described to the subjects who participated in this research. Precedent for the use of fictitious students or simulated conditions has been established in the literature (Beckman, 1973; Friend and Wood, 1973; Brandt, Hayden, and Brophy, 1975; and Helton and Oakland, 1977).

The basic method employed in this study is a modification of a paradigm used by Friend and Wood (1973). Forty special education major teacher-trainees and forty regular elementary education major teacher-trainees were utilized as subjects for this study. These eighty subjects were education majors participating in the 1978 Summer Session at Oklahoma State University, Stillwater, Oklahoma. Subjects were randomly assigned to one of two treatments for each of these two subject groups. These treatments consisted of the description of students labeled Gifted or Normal. Further, each subject then received repeated measures on the treatment of the Sex of Student (male/female), Performance Outcomes (success/failure), and Attribution Categories (ability, effort, task difficulty, and luck). Following the group administration of instructions to subjects in the classroom setting, individual subjects received a packet which contained descriptions of four elementary students' performance on a reading task. These descriptions applied to either a student labeled gifted or normal and these label conditions were then randomly assigned to the subjects. For each of the two groups (gifted/normal) there were four student and situation descriptions (male/success, male/failure, female/success, and female/failure). Subjects were asked to rate the relative influence they believed ability,

effort, task difficulty and lucky guessing had in accounting for the student's performance. Their responses were recorded on four separate sheets, each bearing the appropriate descriptions and conditions for a student. Below each description was a scale ranging from one to eight. Lack of Ability, Lack of Effort, Very Easy Task, and Lucky Guessing were ascribed to the low end of the scale while High Ability, High Effort, Very Difficult Task, and Unlucky Guessing were ascribed to the high end of the scale. By circling either number 4 or 5, a subject would indicate the relative non-influence of that particular causal factor. On this scale, subjects were asked to rate the relative influence they believed ability, effort, task difficulty, and lucky guessing to have had in accounting for the student's performance.

Five research questions were presented in order to investigate the differences in causal attributions made by the teacher-trainees, differences between the causal factors selected by special education majors and those selected by regular education majors, differences between causal attributions ascribed to male and female students, differences between the causal factors attributed to students who failed and those who succeeded, and differences between the causal attributions ascribed to students labeled normal and those labeled gifted. These research questions were investigated by the use of a split-plot factorial (SPF-pr·quv) design (Kirk, 1968).

There were attributions to different causal factors made by teacher-trainees. They made higher attributions to ability than to effort, task difficulty, and luck. This indicates that, as a group, the teacher-trainees did ascribe the influence of ability to be greater in evaluating performance outcomes than the other three causal factors. Such a finding

is consistent with Kelly's (1973) formulation. Being an internal factor, ability is generally a more plausible and stable explanation of performance than are the external factors. On the basis of such a finding, the first null hypothesis is rejected. Teacher-trainees do attribute performance outcomes to different causal factors.

The second null hypothesis is also rejected. The significant Major by Attribution (AE) interaction indicates that special education majors make causal attributions to performance outcomes which are different than the causal attributions ascribed by elementary education majors for the same performance outcomes. Elementary education majors indicated the causal factor of lucky guessing to be more influential than did the special education majors. Further, Scheffé' post hoc comparisons of means revealed that special education majors indicated ability to be more influential than effort, task difficulty, or lucky guessing while elementary education majors also indicated greater attributions to effort and task difficulty than they did to the factor of lucky guessing.

The findings regarding the third research question require a more expanded discussion. The non-significant Sex by Attribution (BE) interaction indicates that teacher-trainees make basically the same causal attributions for performance outcomes for male and female students. This requires that the third null hypothesis be accepted. Teacher-trainees did not attribute performance outcomes differently for male and female students. However, the significant Major by Sex of Student by Attribution (ABE) interaction indicates that when this question is considered by including the specific major of the subject, the findings are more revealing. When teacher-trainee major is taken into account, attributions for performance outcomes for male and female students are

differentially made to different causal factors. By investigating the simple effect of the Sex of the Student at the two levels of Major (Elementary Education and Special Education) and the four levels of the Attribution Categories, it was found that elementary education majors place greater importance on lucky guessing for female students than they do for male students. This was not found for special education majors. To further detail these findings, the simple effects of the subject's Major at the two levels of the Sex of Student and the four Attribution Categories indicate that elementary education majors did place greater importance on lucky guessing for both male and female students than special education majors. Additionally, the attributions to effort by elementary majors were higher than special education majors, for female students but not for male students. Finally, in reference to this question, the simple effects of Causal Attribution at the levels of the subject's Major and the Sex of Student indicate that attributions to different causal factors are made by both elementary and special education majors for both male and female students. The Scheffé' post hoc comparisons of means disclosed that special education trainees' attributions to ability are higher than their attributions to the other factors. This finding held for both male and female students and occurred for the attributions of elementary education trainees also. However, for elementary majors, attributions to task difficulty were higher than their attributions to lucky guessing for female students but not for male students, a result not found for special education majors.

Results of this study call for the rejection of the fourth null hypothesis. Teacher-trainees do attribute performance outcomes to different causal factors differentially for students labeled normal versus

students labeled gifted. An important finding of this study is represented by the significant Label by Attribution (CE) interaction. Such a finding is particularly potent in view of previous literature and research which has suggested that a teacher's behavior toward a student is effected by the label ascribed to that student (Rubovitz and Maehr, 1973). Data from this study offer further confirmation that teacher judgments are differentially influenced by the label of gifted or normal. Analysis of the simple effects of the Label factor at the four levels of Attribution Categories indicates that teacher-trainees' attributions to ability are higher for gifted labeled students than for normal labeled students. However, effort and task difficulty are selected as more potent causal factors for normal labeled students than for gifted labeled students. Further, analysis of the simple effect of Attribution Category at the two levels of the Label factor indicates that attributions for both gifted and normal labeled students are made to different causal factors. It was found that for gifted labeled students, attributions to ability are higher than attributions to the other causal factors. Attributions for normal labeled students were higher to ability and task difficulty than to luck. Although this represents an important finding, the implications of these results regarding the influence of the Label ascribed to the student are more fully evident through interpretation of the significant Label by Outcome by Attribution (CDE) and the Sex of Student by Label by Outcome by Attribution (BCDE) interactions. Such a full interpretation requires first discussing the findings related to the fifth research question.

The significant Performance Outcomes by Attribution (DE) interaction calls for rejection of the fifth null hypothesis. It was found



that teacher-trainees do attribute performance outcomes to different causal factors differentially for students who perform at different levels. This finding coincides with previous literature which suggests that a student's performance may affect future teacher expectations and attitudes (West and Anderson, 1976). Analysis of the simple effects of the Performance Outcomes at the four levels of the Causal Factors indicates that attributions to the two internal factors of ability and effort are higher for successful performance while attributions to task difficulty are higher for failure conditions. Guessing is found to be important for success but not for a student's failure. Additionally, the simple effect of attributions at the two levels of Performance Outcomes disclose that teacher-trainees attribute Performance Outcomes to different causal factors. Scheffé post hoc comparisons of means indicate that attributions to ability and effort are higher than attributions to task difficulty for successful performance. In the failure condition, attributions to effort were found to be lower than attributions to the other three causal factors.

As noted previously, the presence of a significant Label by Outcome by Attribution (CDE) interaction and a significant Sex of Student by Label by Outcome by Attribution (BCDE) interaction allows for a more complete explanation of the importance of the findings related to these last two research questions.

It was found that for success outcomes, the attributions made to ability are higher for students labeled gifted than for students labeled normal, whereas attribution to effort was higher for normal labeled students than for gifted. The attributions made to the two external factors of task difficulty and lucky guessing were not different for

either Label condition. For failure conditions, attributions to ability continued to be selected as higher for gifted labeled students than for normal labeled students. However, attributions to task difficulty were higher for normal labeled students than for gifted. These findings coincide with current literature. Gifted students are expected to succeed on the basis of their ability, while success for normal labeled students is attributed more to the effort of the student. Teacher expectations and attitudes toward exceptional students may not necessarily be positive when the labeled student's success or failure is considered (Jacobs, 1972; Magary and Freehill, 1972; Rubovitz and Maehr, 1973; and Smidchens and Sellin, 1977).

Relevant findings in this same area resulted from examination of the simple effects of the Outcome by Attribution interaction at the two levels of the Label factor. Attributions to ability and effort are higher for gifted labeled students who succeeded than for those who failed, while the factor of guessing was important for success but not for failure. Similarly, for normal labeled students, attributions to ability and effort are higher for success than for failure. However, while guessing is an important factor for both gifted and normal labeled students who succeed, only attributions to task difficulty are higher for normal labeled students who fail.

The simple effects of Attribution at the two levels of Outcome indicate that attributions are differentially made to different Attribution Categories for each of the four combinations of Label and Performance Outcomes. For both gifted labeled students who succeed and normal labeled students who succeed, attributions made to the two internal factors (ability and effort) were higher than the attributions to the two

external factors (task difficulty and lucky guessing). However, the opposite result was found for the students labeled gifted who failed. In the conditions where gifted labeled students failed and normal labeled students failed, attributions to effort were lower than attributions to the three other causal factors. In the condition where normal labeled students succeeded, the opposite result occurred.

In consideration of the Sex of Student by Label by Performance Outcome by Attribution (BCDE) interaction, it was found that a component, the Label by Outcome by Attribution interaction, was significant for male students but not for female students. The simple effects of the Sex of Student at the levels of the Label by Performance Outcomes by Attribution indicate that the normal labeled students who failed, attributions to ability were higher for females than for males. Also, examination of the simple effects of the Label by Attribution interaction at the levels of Sex of Student and Performance Outcome provided further important findings in this area. Attributions to ability were higher for successful gifted labeled male students than for normal labeled male students who succeeded. The trainees' attributions to effort were higher for normal labeled males who succeeded than for gifted labeled males who performed successfully. For gifted labeled males and females who failed, and gifted labeled females who succeeded, attributions to ability were higher than for normal labeled students under these same performance outcomes. Also, for normal labeled male and female students, attributions to task difficulty were higher than for gifted labeled male and female students.


Consideration of the simple effect of Performance Outcome at the levels of Sex of Student and Label provides further clarification. For

both male and female students who were labeled gifted, the attributions to effort were higher for those who succeeded than for those who failed. Also, attributions to task difficulty were the same for gifted students, regardless of their performance. However, for gifted labeled students, the factor of guessing was found important for successful performance but not for failure. For both male and female students labeled normal, attributions to the factors of ability and effort were higher for successful performance than for failure, while attributions to task difficulty were higher for failure outcomes than for success. Guessing was found to be important for success but not for failure.

For each combination of Sex of Student, Label and Performance Outcome, attributions were found to be made to different causal factors. For male and female, gifted and normal, success conditions, attributions to the two internal factors of ability and effort, are higher than the attributions made to the two external factors of task difficulty and luck. However, for male and female normal labeled students in failure conditions, attributions to the two external factors were higher than attributions made to the two internal factors. A different result was found for male and female students labeled gifted whose performance was described as failure. For these students who failed, attributions to effort were lower than attributions made to the other three causal factors.

#### Conclusions of Study

As mentioned previously, in the context of attribution theory, Kelly's (1973) augmentation and discounting principle provides a concise basis upon which to explain interactions between causal attributions and



such variables as student characteristic and performance outcomes. In relation to these principles, several factors are relevant to their general use in discussing causal attribution and their specific use in discussing the findings of this study. According to the formulations of Kelly (1973), an individual may make a causal inference on the basis of a single observation of an effect. Such an individual is not totally unknowledgeable in as much as he or she has, either directly or indirectly, made some observations of similar effects previously and has made some assumptions and decisions about possible relevant causes, and how these relate to this type of effect. According to Kelly's (1973, p. 413) discounting principle: "The role of a given cause in producing a given effect is discounted if other plausible causes are also present." Additionally, a factor which may be present, or inferred to be present by the attributor, and which may be counterindicative of success, provides a basis for the attributor to believe the cause of the effect to be more internal to the performer. This constitutes a base which Kelly refers to as the augmentation principle. The uses of the discounting and augmentation principles assume that when an individual observes an effect, that individual takes into account the factors that might plausibly have caused it in interpreting that effect. These principles have specific applications to the interpretation of the findings of this study. Most notably, in presenting the causal factors to which teacher-trainees attribute varying performances of students who have been differentially described on the basis of sex and labels, it is necessary to understand how this attribution process occurs. Also, the implications that these causal attributions may validly reflect certain attitudinal bases and biases on the part of the teacher-trainees may be

more comprehensible in the knowledge that the attributions are not arbitrary but rather reflect certain predispositions possessed by these trainees. A single observation or descriptions of behaviors and the surrounding circumstances are fitted into the individual's conceptions of the manner in which two or more causal factors interact in relation to a given event. As noted by Kelly (1973):

Given information about a certain effect and two or more possible causes, the individual tends to assimilate it to a specific assumed analysis of variance pattern, and from that to make a causal attribution (p. 115).

As presented earlier, the findings of this study are represented by three two-way interactions (Major by Attribution; Label by Attribution, and Outcome by Attribution), two three-way interactions (Major by Sex by Attribution and Label by Outcome by Attribution), and one four-way interaction (Sex by Label by Outcome by Attribution). These all provide valuable information and contribute answers to the selected research questions. However, the results of the simple effects breakdown of the Sex by Label by Outcome by Attribution interaction provides for the most thorough explication of the causal attributions of the teacher-trainees for the various combinations of sex of student, label and performance outcomes. A discussion of this particular interaction breakdown and associated findings now follows.

The finding that for male and female success conditions that attributions to ability are higher for gifted labeled than for normal labeled students is clear support for the discounting principle. The most plausible explanation for the success of students labeled gifted is ability since it is directly inferred by the gifted label. However, the same finding for male and female failure conditions also supports Kelly's (1973) discounting principle in that even for failure perform-

ances, students labeled gifted are inferred to have greater ability. Further support for the discounting principle is also provided by the finding that attributions to task difficulty are higher for students labeled normal than for students labeled gifted in the male failure and female failure condition. For normal students, task difficulty is a more plausible explanation for failure than it is as an explanation of failure for gifted students as has been noted by Beckman (1973) and Rest and Weiner (1973). Describing a failure performance of a gifted student constitutes implausible information and task difficulty is more likely to be discounted as an explanatory factor for gifted but not for normal. Further support for this observation is provided by the finding that for gifted labeled male and female students, attributions to task difficulty are the same for success and failure outcomes while for normal labeled male and female students, attributions to task difficulty are higher for failure than for success. The higher attribution to task difficulty for normal than for gifted female success coincides, in part, with previous findings in which success for females is more readily ascribed to the most plausible external factor. The majority of the subjects used in this study consisted of female teacher-trainees. As female adults, their attributions for the performance of female students are perhaps more strongly influenced by their own external orientations than they are by a label ascribed to a student with whom they have not actually interacted.

For the male success condition, but not for the female success condition, attributions to effort were higher for normal labeled than for gifted labeled students. This finding of differences for males supports Kelly's (1973) augmentation principle since normal students would be

expected to be required to expend more effort in order to achieve success similar to gifted students. The failure to find this result for females is not clearly explainable. There was no difference between the attributions made to effort for normal and gifted labeled females whose performance was described as successful. As mentioned previously, numerous studies have reported various findings regarding sex differences in attributions for performances. However, they have been by and large inconclusive.

For male and female students in both the gifted and normal label conditions, attributions to ability and effort were higher for success than for failure. This supports previously reported findings wherein successful performance has been readily ascribed to internal rather than external factors. Additionally, for both male and female students, in both the gifted and normal conditions, guessing is important for success but not for failure. In the context of this study, the factor representing the continuum of unlucky guessing to lucky guessing has certain implications not considered in previous literature. Historically, the attribution to chance or luck was representative of a reference to an external cause over which the actor had no control, but it has never been more specifically defined. As a causal factor in relation to the performances of school children on an academically related task, a vague word such as luck or chance did not readily relate to the purpose of this study. Therefore, following the precedent of Friend and Wood (1973), the concept of lucky versus unlucky guessing was selected. Observation of classroom students at any grade level quickly discloses that students do, in fact, "guess" answers and as often as not those guesses may be correct. Although no studies are available which pre-



sent this guessing to be more prevalent among one group of students as opposed to another, there are many studies related to teacher attitudes and interactions with students which show that teachers do interact differently on the basis of their perceptions of how the student may have arrived at successful performance. As an issue in this study, guessing may be initially considered to be some internal causal factor attributable to the student. However, lucky guessing/unlucky guessing and its variable outcomes may also be perceived to be an external factor in that it also involves the difficulty level of the task, environmental variables and many other factors not readily controllable by the actor. It would seem likely that, as perceived by the teacher or a teacher-trainee, performance related to lucky guessing would not be a necessarily positive factor. If the outcome is successful, it is not seen as a result of some invested effort or ability on the part of the student. If, on the other hand the student is not successful, the teacher may view that negatively because the student did not "use his ability or try very hard." In relation to the reported finding that lucky guessing was an important factor for both male and female students labeled gifted, since information regarding task difficulty was minimal, lucky guessing (as viewed as some possible internal attribute) is a plausible factor to explain success. Further, its higher ascription to gifted students but not for normal may be explained by the inference and stereotype attached to the gifted label. A child born gifted, possessing ability and putting forth effort, could easily be conceived of as a lucky individual.

Comparing the relative importance of the four causal factors for each combination of sex of student, label, and performance outcome con-

ditions, the two internal factors were perceived as contributing more for successful outcomes of male and female, gifted and normal labeled students. However, external factors were perceived as more important for the failure performance of male and female normals, while the failure performance of male and female gifted students was perceived to be the result of decreased effort. These findings are also consistent with previous studies which report success to be more attributable to the stable factor, ability, while failure is more plausibly explained by lack of effort (Rest and Weiner, 1973; and Weiner, 1974). There are certain implications of these findings related to this particular study which require some discussion. When students are labeled gifted, findings from this study have shown that ability is strongly ascribed to these students and such an ascription holds especially for their successful performance. When the performance of these students is described as unsuccessful the plausible explanation is that they did not put forth sufficient effort. Such low motivation is a variable attributable to the control of the student and frequently subject to negative evaluations by teachers. Any student who does not put forth effort is not usually viewed favorably. In the case of the gifted, who are perceived to put forth low effort, the resultant negative interaction between teacher and student may have a serious detrimental influence upon that student. This can be illustrated by the previous findings by Weiner and Kukla (1970) who reported that students described as having ability but low motivation received larger punishment for failure.

There is an associated finding in this study with implications which should also be discussed. Although not directly within the sex

of student by label by outcome by attribution interaction, the influence of the gifted versus the normal label is evident in that subjects ascribed the factor of ability higher for gifted than normal labeled students across all performance outcomes. This occurred, even though subjects had no opportunity to directly observe any student behavior, nor was there any information available to the subjects regarding the difficulty level of the task. Taken in the context of other results of this study, it seems evident that the potency of the gifted label is represented, at least in part, by the assumptions the teacher-trainees made regarding the student to which the label is ascribed. Public law (93-380) has identified the gifted student as a member of an exceptional student population. As such, the student possesses certain qualifications as well as certain special needs which must be met academically and socially. However, if teachers might assume this type of student to possess some assumed generalized levels of ability in all academically related tasks, then the student's lack of success in a given situation may subject him to more negative reactions or interactions on the part of the teacher than might occur if the student was not labeled. Further, if ability level is assumed, then any real needs which the student may have to develop specific academic skills may not be met.

As the findings of this study have been presented and summarized, several implications have been indicated, and these have been discussed as they relate to this research and previous research. However, the implications of the influence of the gifted label upon the causal attributions of teacher-trainees are such as to require more extensive discussion. Although prior studies have dealt with the influence of exceptional labels upon students who have school related or learning dif-

difficulties, no such studies have dealt with the gifted label as it may influence teacher attributions for student performance. Therefore, the following discussion presents certain implications related to the influence of the gifted label as reported in this study.

The label gifted promotes certain expectations. Success is perceived to be based on ability, which, when not fulfilled, may lead to perceptions of low effort for explanation, rather than task difficulty or bad luck. This state of affairs may contribute to a negative attitude toward gifted labeled students when they do not live up to these expectations. However, the same expectations are not held for normal labeled students, so that when their performance is described or perceived as failure, such failure is best explained by the difficulty level of the task and lower ability. Additionally, the increased importance of lucky guessing for success of gifted students may lead to somewhat negative effects. Thus, for similar performance, attributions for gifted students may lead to more negative attitudes of teachers than for normal students. The implications here may well take on additional importance as they apply to the impreciseness of the definition of the label "gifted." For teachers, and especially teacher-trainees, such a label may have varied meanings. In terms of public law, a gifted student is identified on the basis of his or her performance on a standardized intelligence test and the subsequent numerical IQ score. This provides a minimum of meaningful information to a teacher about the actual ability and motivation of a student as they may be demonstrated across many academic and achievement-related tasks. Further, special education programs designed for these exceptional students must also deal with the "talented" student. The attitudes of

teachers, as they may be related to these two kinds of exceptional students and the subsequent interaction of teachers with these students may well be effected by the clarity with which the attributes of gifted and talented students may be defined.

#### Recommendations

The results of this study have led to the preceding conclusions and resultant discussion of certain implications. In this particular study, trainees did attribute different causal factors to different performance outcomes. Also, the subjects of this study attributed different causal attributions differentially to students labeled differently. The influence of the label attached to a student, related to that student's performance has an observable effect on the attribution given for that performance. Because of the interaction of these various factors and the impact which such interactions may have directly upon the student, further study in this area is indicated.

In future investigations of causal attributions, some modification of procedure may improve understanding of the role of luck or chance. Whereas this and previous studies have used an unlucky guessing to lucky guessing continuum, it may be more informative to employ different continua, ranging from no luck to lucky guessing (or good luck) for success and a continuum from no luck to unlucky guessing (or bad luck) for failure. This should provide a clearer understanding of the role of luck in the process of causal attribution.

Also, as this study dealt with subjects who were teacher-trainees with minimal classroom experience, the generalizability of the findings may be somewhat limited. To make the findings more applicable to the

real world of the classroom a similar study using actual teachers would provide information more applicable to observable teacher interactions with students as well as their attributions.

Associated with the preceding recommendation involving a study in the context of the real classroom, a study following the basic procedures of this one which also validates the accuracy of the teacher's causal attribution would be informative. Such a study would allow for teachers to indicate their perceptions of the causal factors for a particular performance and compare these ascribed attributions to the actual cause of the performance, such as a gifted student who, in fact, did not put forth effort, or a normal student who did put forth effort in order to achieve.

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VITA<sup>2</sup>

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