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This study investigated the instructional beliefs of 182 elementary classroom teachers to determine the degree to which teachers' assumptions about instructional practices influence their teaching b avior and the classroom perceptions of their students. It used data collected from a national research project, Goodlad's "A Study of Schooling." Discriminant and content analyses were conducted on data representing various sources and perspectives on the classroom curriculum of each teacher. While it was found that teachers' instructional beliefs were generally consistent with their teaching behaviors, only one of the four teacher belief types investigated exhibited a wide range of teaching skill reinforced by the expressed intention to accomplish a broad set of instructional outcomes. Their classrooms also tended to score higher than those of the other three teacher types on student perceptions of a positive classroom environment. Implications for both research and practice are discussed. (Author)

THE IMPACT OF TEACHERS' INSTRUCTIONAL BELIEFS ON THEIR TEACHING: IMPLICATIONS FOR RESEARCH AND PRACTICE

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ABSTRACT

This study investigated the instructional beliefs of 182 elementary classroom teachers to determine the degree to which teachers' assumptions about instructional practices influence their teaching behavior and the classroom perceptions of their students. It used data collected from a national research project, Goodlad's A Study of Schooling. Discriminant and content analyses were conducted on data representing various sources and perspectives on the classroom curriculum of each teacher. While it was found that teachers' instructional beliefs were generally consistent with their teaching behaviors, only one of the four teacher belief types investigated exhibited a wide range of teaching skill reinforced by the expressed intention to accomplish a broad set of instructional outcomes. Their classrooms also tended to score higher than those of the other three teacher types on student perceptions of a positive classroom environment.

Implications for both research and practice are discussed in relationship to Nyberg and Egan's (1981) philosophical presuppositions concerning human nature, the origin and meaning of culture, and the relative importance of the individual and the society in order to help clarify how the classroom curriculum is influenced by teachers' beliefs. In-depth case studies and longitudinal surveys of teachers' instructional beliefs under varying school conditions are recommended.

This paper will describe the instructional beliefs/values of 182 elementary classroom teachers, their reported and observed teaching strategies, and their students' opinions of their classroom learning environments. The following questions are explored: 1) What belief sets do elementary classroom teachers hold about instructional issues related to classroom discipline and control and student choice and participation in decision making? 2) What classroom procedures or instructional strategies distinguish teachers with different belief sets? 3) Do students whose teachers hold different belief sets view/ experience schooling differently? 4) How do teachers' instructional beliefs and classroom procedures seem to be related to desired schooling outcomes? 5) What implications does the study of teacher instructional beliefs have for research on teaching and the process of curriculum change?

Perspectives on Teacher Belief Systems and Behavior

In their study of belief systems, Harvey, Hunt and Schroder (1961) found that the general U.S. population hold values that emphasize authoritarianism, closedness, and rule-orientation. More importantly, with respect to teachers, Harvey's studies (1970A) indicate that this value orientation is higher among teachers than among the population at large. Furthermore, the degree of authoritarianism is higher among established teachers than among their newer colleagues - an indication of a possible higher attrition rate for less authoritarian-type teachers.

Harvey (1970B) describes a belief system as a kind of psychological filter which renders the individual selective in making discriminations as to what is attended to,admitted into,and kept out of one's environment.

It represents a set of predispositions to perceive, feel toward, and respond to ego involving stimuli and events in a consistent way. Especially pertinent to schooling is the fact that a person's belief system influences the kind of cues on which a person relies and utilizes in curriculum decision making. Whereas a person in Harvey's System 1 (high concreteness) will be disposed to rely on cues implying status and authority, another, System 4 (high abstractness) will be more critical and be inclined to use a variety of information carefully assessed for reliability.[1]

Harvey and his colleagues, like Piaget and Kohlberg, associate belief systems with conceptual and moral development - higher levels of abstract reasoning are associated with "lower stereotyping and greater flexibility in the face of complex and changing problem situations, toward greater creativity, exploration behavior, tolerance of stress, etc." (Harvey and Schroder, 1963, p. 134). At a more interpersonal level, more abstract systems as opposed to concrete systems are associated with greater self-understanding and empathic awareness of others. In light of this research, it would seem impor . to understand something about the instructional beliefs held by teachers, since there is a great need today for teachers whose belief systems foster a more conceptual, democratic, open-minded and creative approach to teaching (Arnold, 1977). Also, it would seem that young people could be more effectively prepared to deal insightfully with themselves and their world if their teachers possessed belief sets that were predisposed to desired educational outcomes.

Fishbein and Ajzen (1975), Rokeach (1960), Kerlinger (1967) and other attitude researchers agree that all beliefs are predispositions to action. In addition, beliefs underlie attitude formation. In their development of a conceptual framework that attempts to unify and systematize theory and literature on attitude research, Fishbein and Ajzen define belief as:

> the information a person has linking an object to some attribute or expectancy; belief is usually in relationship to a dimension of subjective probability or knowledge (p. 12).

In positing a causal chain, they view beliefs as the receiver of available information needed for the formation of attitudes which in turn influence intentions, which are the basis for decisions that lead to action.

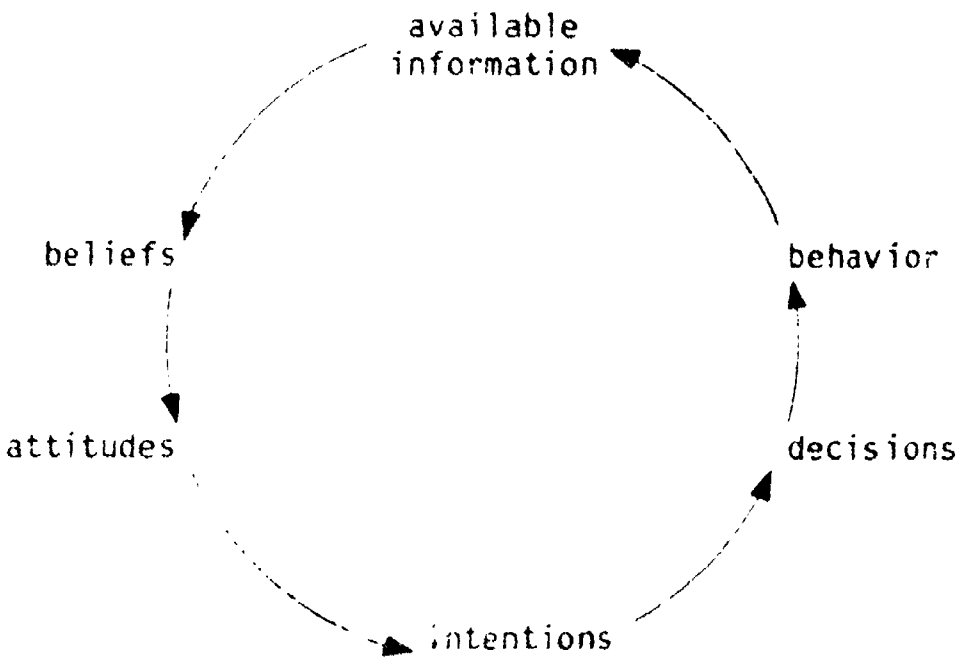


Figure 1: Relationships between Beliefs, Attitudes, Intentions, Decisions, Behavior, and Available Information

Numerous conceptual and methodological difficulties surround any attempt to study teacher beliefs - their referents, their source, their development and the extent to which they influence behavior. This study simply attempted to identify from among two belief referents (teacher control and student participation) the degree to which one or both was held and the extent to which they seemed to influence classroom teaching behavior and student perceptions of the classroom environment. A brief discussion of two problem areas specifically related to this study is presented with the realization that several others could be added. One area deals with external influences on teacher beliefs that supposedly present methodological problems in studying beliefs, while the second is a more conceptual problem arising from the difficulty of being able to determine the nature of belief systems held by teachers.

Given the complexity of teaching (e.g., Dreeben, 1968), the reflexive nature of classrooms (Jackson, 1966; Kounin, 1970), and other external circumstances that contribute to teacher socialization (Lortie, 1975) it would seem not only that teachers might be constantly modifying their beliefs but also that external influences continually modify behavior. However, caution needs to be exercised here in seeking to understand the meaning of "available information" as presented in the Fishbein and Ajzen cyclical beliefs - behavior model. Since teachers possess some core beliefs that are not easily changed and from which they take their cues (Harvey, et al., 1961), not all information is psychologically accessible to them. Presumably what is available to them helps them modify their beliefs and correspondingly their behavior in the direction of

their core values. Thus, not all teachers will have their beliefs modified in the same way given similar experiences; that is, teacher socialization cannot be supposed to result in a homogeneity of beliefs. The fact that so many researchers have found diverse belief systems and behaviors operating within the same school lends support to this position (Bennett, 1976; Bussis et al., 1976; Carew and Lightfoot, 1979; Gracey, 1972; Morgan, 1977). Unfortunately, the differences found are not equally distributed. Rather the balance is heavily tilted, as described by Harvey and supported by these and other classroom researchers, toward more authoritarian-type, dependency-oriented teacher beliefs and behaviors.

A second problem related to a study of teacher beliefs and their influence on classroom behavior rests with the need for an understanding of the nature of teacher beliefs and the degree to which they are held. As reported by Rokeach (1968), individuals do hold different types of belief sets (e.g., descriptive, evaluative, and prescriptive) that are not equally as vulnerable to outside information. Whatever the content or source of a belief, however, it is commonly assumed by attitude researchers that beliefs are organized around an underlying point of reference. Obviously, this underlying point of reference represents something that is important to an individual. The extent to which that point of reference can be influenced is a difficult question. In attempting to help teachers improve their teaching, some consciousness-raising, awareness or feedback regarding their classroom behavior is needed before teachers can appropriately change their instructional beliefs and thus

their behavior. However, in order to do so it seems important to be able to identify what that referent, or set of referents, is.

Kerlinger (1967) points out that for two individuals who are said to have an attitude about the same object (e.g., progressive attitudes about education), different beliefs about that object may be "criterial" (relevant) or at the center for a person "... what is criterial for one individual may not be criterial for another individual. To be sure, if an attitude is to be an attitude, criterial referents must be shared. But they can be and are differentially shared" (p. 111). The traditional research on teacher beliefs assumes a continuum of relevance for any referent such as teaching, discipline, self, or subject matter, arriving at bipolar descriptions of beliefs (e.g., Anderson, 1943 - dominative versus integrative; Flanders, 1965 - direct versus indirect; Levin, Lippit, and White, 1939 - authoritarian versus democratic; and Willower, Eitell and Hoy, 1967 - humanistic versus custodial orientation). However, descriptions of belief sets are not necessarily bipolar since some referents in a group are differentially criterial for some individuals. Thus, when one discusses progressive and anti-progressive ideas in education, for example, one is speaking in a bipolar manner. The individual who is anti-progressive disapproves the same issues that a progressive approves. In contrast, when one talks of progressive and traditional ideas in education, one is talking not in a bipolar manner but in a dualistic manner: a traditional individual does not necessarily disapprove progressive ideas.

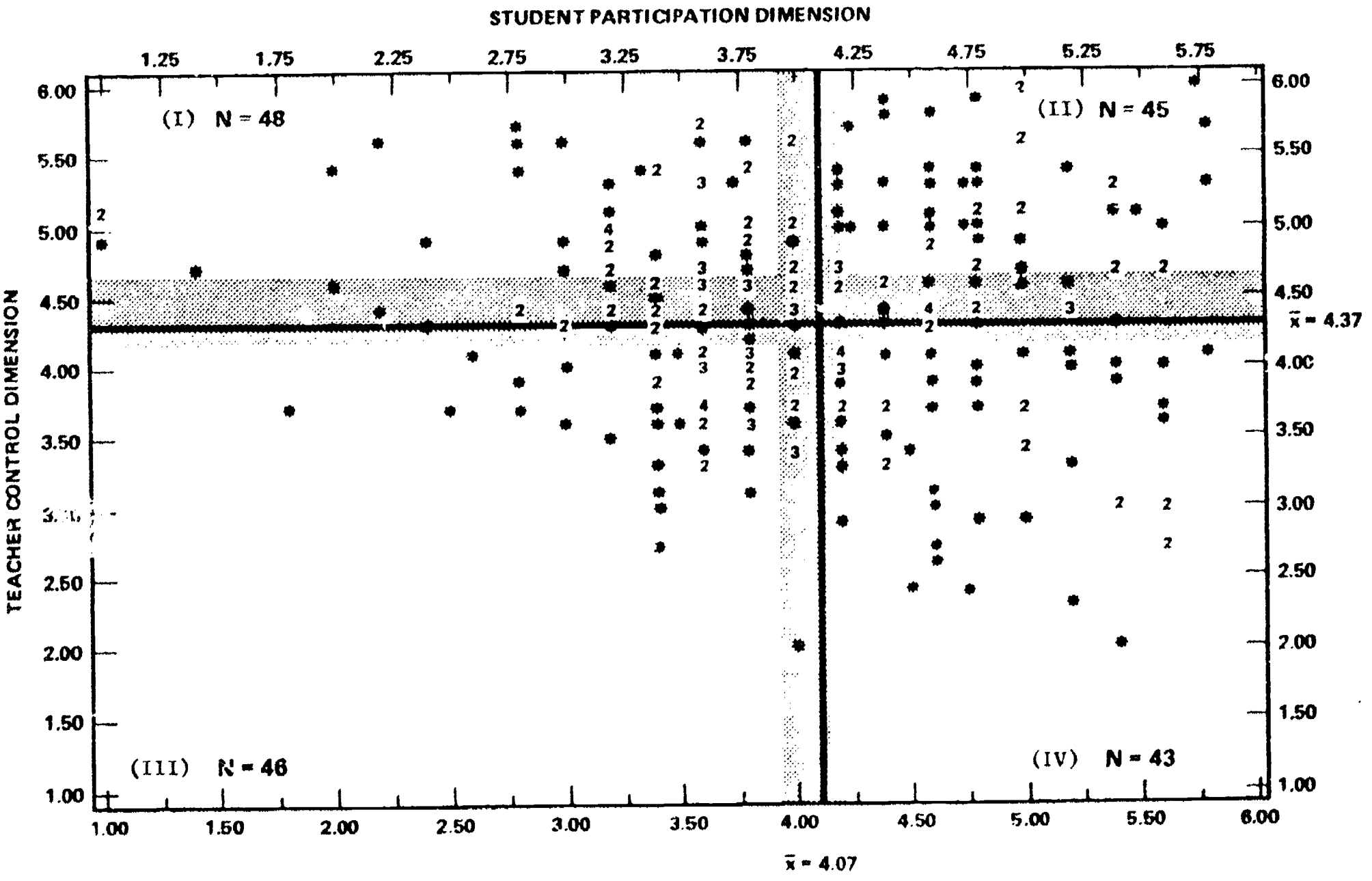
Kerlinger describes "dualistic" in terms of set language. For some universal set, A and B are non-intersecting subsets of U. Thus, teachers who appear to hold "conflicting" or "mixed" beliefs as in numerous studies of teachers' beliefs (e.g., Borko et al. 1979; Sontag, 1968; and Wright, 1980) may simply consider a particular criterial referent not to be as important as another. For example, even though classroom discipline frequently appears in the literature as a strong referent for teachers as a whole, certainly it is not criterial for some teachers. It would seem that when the same referents are strongly shared, they constitute a belief/value system that is acted upon (Kirschenbaum, 1983). I would argue that for a teacher who has a criterial or relevant instructional belief that is not shared or only weakly shared with another teacher, that the teaching behaviors of those teachers would be distinguished, that is, provided a study tapped an underlying assumption about instruction that was important to that teacher.

This paper discusses the beliefs and behaviors of two groups of elementary teachers for whom different belief sets are criterial - teacher control and student participation. It is concerned with how these instructional beliefs influence teacher behavior and student opinions in the direction of desired school outcomes.

METHODOLOGY

The subjects of this study were drawn from the 286 elementary teachers included in a national research project, A Study of Schooling, under the direction of John I. Goodlad. Data were collected during the spring and fall semester of 1977 in seven states located in widely dispersed geographic areas (Goodlad, 1983). All 286 teachers took the Teacher Beliefs Inventory (see Appendix A) and their scores for the two constructs - teacher control and student participation (see Appendix A) were plotted on a scattergram (see Figure 2). It was immediately apparent that scores for all teachers were negatively skewed on both constructs. That is, on a six-point scale, more than half the teachers agreed "mildly" (4) or "moderately" (5) with the belief statements expressed on both scales. Agreement was slightly stronger, however, regarding teacher control ($\bar{x}$ - 4.37) than for student participation ($\bar{x}$ = 4.07). The tendency to disagree "moderately" (2) or "strongly" (1) was slightly greater for student participation than for teacher control. In other words, for the entire teacher sample, scores on both constructs tended to favor teacher control and student participation overall. However, for some groups of teachers, only one of the two constructs tended to be a criterial referent - that is, one that seemed to be particularly relevant for a teacher. For two other groups, either both constructs were criterial or neither were.

In order to obtain classroom-based data, all teachers were adminis-



TOTAL: N = 182

Figure 2. Scattergram of Teacher Control and Student Participation Scores

tered questionnaires. A subsample of 80 teachers was observed for three days using a modified version of the Stallings Classroom Observation Instrument, interviewed using a combination structured and open-ended interview format, and the teachers' 2,082 students were administered questionnaires. The results reported in this study are drawn only from the four groups of teacher types or 182 teachers whose scores fell a distance from the mean (see Figure 2) and the subsample of 80 whose classes were observed. Both the primary group of 182 teachers and the subsample of 80 were evenly distributed across all grade levels and types of schools (i.e., regarding size, location, socio-economic, and racial characteristics).

The dimensions that were used to investigate classroom behaviors and student perspectives as reflected in the questionnaires, interviews, and observations are summarized by the following categories: 1) goals of schooling: intellectual-personal (questionnaire); 2) student-intended learnings: academic-behavioral (interview); 3) teacher decision making: individualized-universalized (questionnaire); 4) methods of instruction: common-uncommon (questionnaire); 5) grouping arrangements: small group-whole class (questionnaire); 6) methods of instruction: common-uncommon (observation); 7) grouping arrangements: small group-whole class (observation); 8) classroom leadership: teacher directing-student directing (observation); 9) classroom learning environment: negative-positive (student questionnaire).

Discriminant analyses were performed on these variables sets in order to determine the extent to which the two sets of teachers could be distinguished from one another. Overall correlations tended to be moderate. However, the highest correlations were found for student perceptions of the classroom (.56 and .64) and for teacher decision making (.52). For the remaining variable sets, the correlations ranged from .27 to .49. Although not considered

important for this exploratory study, most of the correlations were also statistically significant at the .05 level.

The overall trends and patterns in the data strongly indicate important differences between teachers for whom teacher control was criterial and for those for whom student participation was criterial. Controller teachers (high on teacher control) appear to embrace in both belief and practice a classroom curriculum different from relator teachers (high on student participation). These differences will be described and discussed in the next sections.

RESULTS

Even though discriminant analyses were conducted on four different teacher belief groups to correspond to the four combinations of high-low scores (i.e., Type I - high teacher control, low student participation; Type II - high teacher control, high student participation; Type III - low teacher control, low student participation; and Type IV - low teacher control, high student participation), only the two groups for whom one of the constructs was criterial (Types I and IV) will be reported and discussed in this paper. However, the results of each discriminant analysis for all four teacher types can be found in Appendix B.

While all four teacher belief types were distinguished from one another on all the variable sets reported here, the most distinct and conceptually clear trends and patterns could be noticed for Types I and IV. Generally, Type II teachers were closest to Type I teachers and Type III teachers to Type IV. But these relationships were not always consistent. Figure 3 shows a summary of the discriminant scores for all four teacher belief groups on the nine variable sets.

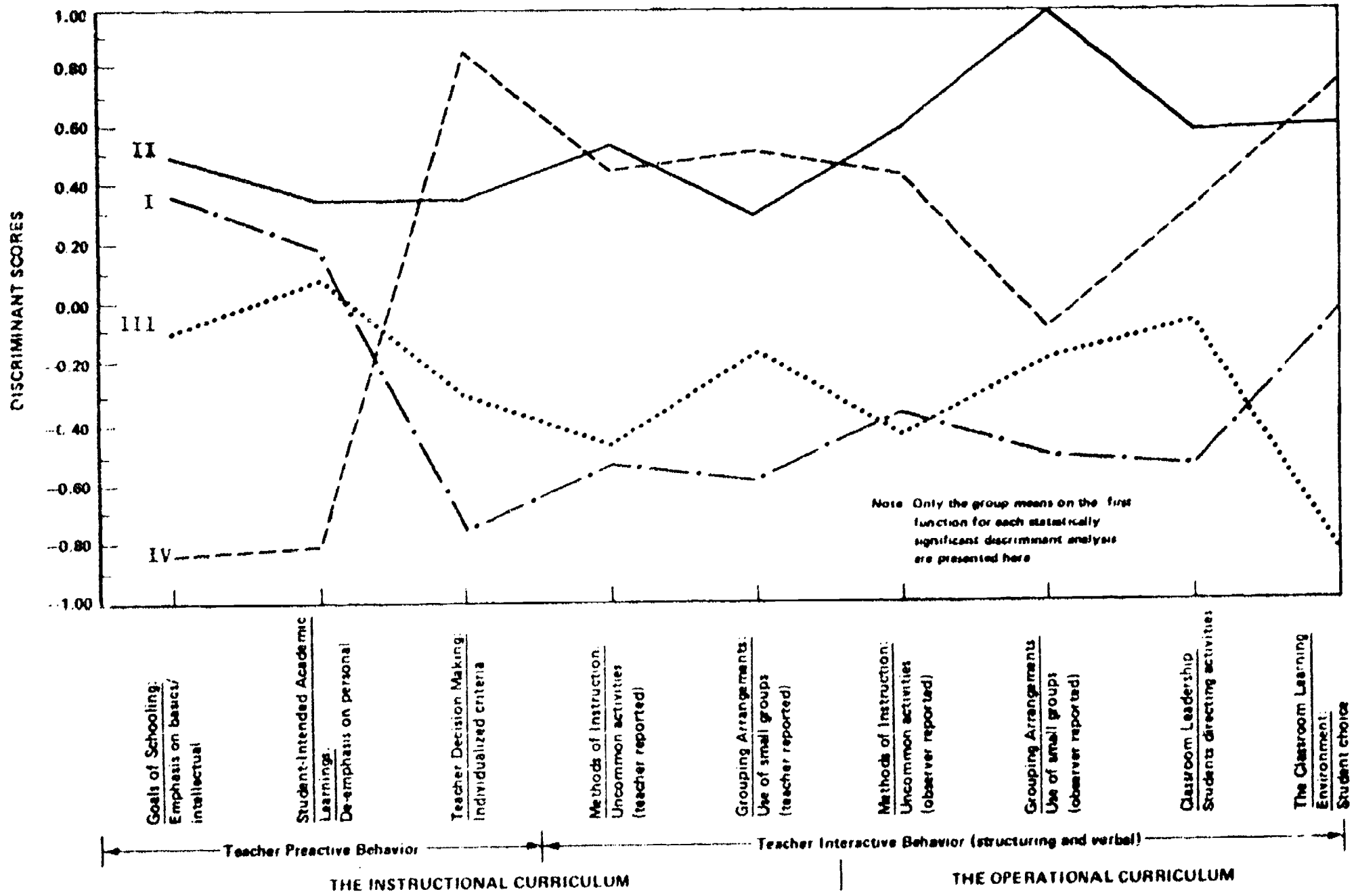


Figure 3. Profile of a Typology of Teacher Educational Beliefs and Elementary Classroom Processes

Controller Teachers

Controller teachers (Type I) are defined as those with high scores on the teacher control construct (these 48 teachers either "moderately" or "strongly" agreed with statements favoring teacher control of the classroom) and moderate or low scores on the student participation construct (41 teachers either "mildly" agreed or "mildly" disagreed with statements favoring student participation in classroom decision making while only 7 "moderately" or "strongly" disagreed). Obviously, teacher control was criterial while student participation was not.

Controller teachers were observed in their classroom teaching procedures to use fewer teaching strategies, repeat conventional-type practices more frequently, and permit less interaction among students and between the teacher and students than did teachers who scored high on the student participation construct (Type IV). Teacher lecturing/explaining to the whole class, and teacher monitoring of students working independently were by far the most frequently observed teaching strategies. Almost no incidences were found in the classroom of these teachers where students directed an activity or initiated an interaction of any kind. Controller teachers tended not to use teaching methods that involved the use of instructional materials, including audio-visual equipment, nor did they utilize class discussions, role-playing or other more interactive-type activities in their classrooms.

After the classroom observations were completed, we asked the teachers to answer a 36-page questionnaire that included several hundred questions about their classroom procedures. Controller teachers reported more fre-

quently than others that they use activities that emphasize listening, writing reports, and taking tests and quizzes. They also reported that they infrequently individualized instruction, even to the extent of using small group arrangements. Rather, they reported that they found it more useful to teach to the whole class.

With respect to lesson planning and other aspects of curriculum decision making, controller teachers expressed views and reported behaviors that were in contrast to those of others. Controller teachers said they were more influenced by curriculum guides, standardized test results, textbooks and commercial materials than by student background and preferences in planning for teaching. They also said they were influenced by informal information about student performance and behavior in previous classes, as well as their own observations and analysis of current student work.

When asked about the broad purposes or goals of schooling - a basis for planning and decision-making - controllers chose intellectual development with an emphasis on the basic skills as the most important goal schools should emphasize. They tended to downgrade the importance of helping students exercise independent thought before they were thoroughly grounded in facts and knowledge about basic subject matter.

After questionnaires were completed, teachers were individually interviewed about the specific student-intended outcomes they had in mind for students in their classes for that particular year. Specifically, they were asked to respond to the following question:

> If you had to rank order them from most important on down, what are the five most critical things you want the students in your class to learn this year? By learn, we mean everything that the student should have upon leaving the class that (s)he did not have upon entering."

Teachers' responses were content-analyzed and classified to distinguish between a) subject matter or more general academic development outcomes and b) behavioral or non-subject-related outcomes. Controller teachers were more likely than the second group to list specific skills or subjects such as "learn science, reading and math," "improve reading comprehension rate," and "develop scholastically." In addition, they were more likely to list an academic goal first. The majority of goals that these teachers listed, however, tended to be behavioral goals rather than academic outcomes. In their ranking, controller teachers placed a strong emphasis on student conformity and dependence on teacher authority and classroom expectations. These responses included such desired states as student obedience to classroom rules and regulations, the development of independent and quiet work and study habits, conformity to grade level expectations, and the improvement of classroom conduct.

Student opinions were obtained through a 21-page questionnaire for upper elementary students and an 8-page one for early elementary students asking them in part to respond to statements about "what happens in this class and how you feel about it." Since this study was focused on classrooms and groups of students rather than on the students within them as individuals, student opinions were averaged within classes and

became systematic properties of the classes themselves. Thus, student perceptions are reported at the class level in terms of class means and percentages.

The discriminant analysis performed on the teacher belief groups and the perceptions of early elementary students regarding their classroom learning environments were not significant and produced weak correlations between the canonical discriminant functions and the discriminating variables. Thus, the opinions of early elementary students about their teachers and classrooms did not distinguish controller teachers from any other group. Perhaps, as has been suggested by other teacher beliefs researchers (e.g., Rian, 1969), younger children have not had enough school experience to be able to distinguish differences in classroom environments. However, the highest correlations in the study were obtained between a discriminant function and its set of discriminant variables for upper elementary students measuring their perceptions of the classroom learning environment. Controller teachers were perceived negatively as measured by students' responses to such statements as "We don't feel like we have any freedom in this class," "I wish I had a different teacher for this class," and "My teacher gets mad when I ask a question." Students also felt that they had very little say in choosing books and materials in these classes.

Relator Teachers

Relator teachers (Type IV) are defined as those with high scores on the student participation construct (of these 43 teachers, 37 either "moderately" or "strongly" agreed with statements favoring student participation in decision making, while 6 "mildly" agreed) and moderate or low scores on the teacher control construct (39 either "mildly" agreed or "mildly" disagreed with statements favoring teacher control of the classroom while 4 "moderately" disagreed). Obviously, student participation was criterial for these teachers while teacher control was not.

In contrast to controllers, relator teachers were observed to depend less on lecturing/explaining to the class and more on the utilization of a variety of teaching strategies, including the use of instructional media and materials, different grouping patterns, and classroom discussions. In addition, relator teachers were more likely to use open-ended questioning in addressing students than were their counterparts, even though such incidences were low. Again, although the incidences were low, student-directed activity was more likely found in relators' classrooms than in those of controllers.

In response to the questionnaire items, relator teachers reported a greater use of diverse pedagogical methods such as role-playing, student reports, interviews, student projects, class discussions, and so on than did controller teachers. Also, they were more likely to individualize instruction using a variety of ways in which to do it, including the use of different grouping arrangements, different objectives, different materials and so on. They depended less on total class teaching as a

pedagogical method and preferred small group teaching.

In planning for teaching, relators reported that student preferences, interests and abilities accounted for most of the information needed in order to make decisions about instruction and that evaluation based on student projects, reports and performances were also considered. Textbooks, curriculum guides, commercial materials, and standardized test results did not play a dominant role in curriculum decision making for these teachers as it did for controller teachers. When asked about the foundational purposes for their work or goals of schooling, relators preferred personal development, that is, instruction which builds self-confidence, creativity, ability to think independently and self-discipline, over basic subjects and skills and intellectual development.

When relator teachers were interviewed about the specific student-intended outcomes they had for students in their classes, they were remarkably consistent in their level of agreement between general schooling goals and those specifically intended for their students. They ranked student outcomes related to personal development first and more frequently than those related to subject matter or basic skills. Their concern about students achieving social goals (e.g., social and civic responsibility, awareness and appreciation of cultures, and the ability to interact well with others) was a contributing factor in distinguishing these two teacher belief groups. The kinds of behavioral goals relators wanted for their students reflected autonomy and independence rather than conformity-type goals given by controller teachers. Independence-type

goals included statements about the desire for critical or independent thinking, creativity, self-direction, self-motivation, development of personal potential and an improved self-image.

In responding to statements about "what happens in this class and how you feel about it." upper elementary students of relators reported that they felt they had more choice regarding classroom activities, liked their teachers better than did students of controller teachers and felt they had more freedom.

One important set of variables that were expected to distinguish these two teacher belief groups but in fact did not were observations of classroom affective interactions defined as teacher support, affirmation, warmth, and encouragement. Sociologically, it may be that classroom observers, necessarily outsiders, were not able to understand the meaning of situations as they occurred in the classroom. Furthermore, the classroom observation instrument used in this study (a modified version of the Stallings Classroom Observation Instrument) may not have been sensitive enough to adequately identify and describe classroom affective factors, or the presence of observers may have affected the participation of those being observed. At any rate, it appears that controller teachers and relator teachers are not distinguished from each other as more likely to express emotional support to their students regarding their instructional tasks.

CONCLUSIONS AND DISCUSSION

The nature of the beliefs held by these two groups of teachers and their subsequent classroom behaviors suggests a fundamental difference in the type of curriculum offered to students. The data indicate that a teacher's adherence to a particular set of beliefs about instructional practices might limit what a student can obtain from schooling. Nyberg and Egan (1981) distinguish between a socialization curriculum characterized by activities directed toward enabling students to perform as competent agents within society and an educational curriculum as including socialization but going beyond it by offering a range of cultural attainments which enrich in some way the life of the person who acquires them. Admittedly, the meaning and measurement of the latter -- educational aims and their corresponding activities -- is vague and difficult, but nevertheless important, and should not be avoided. The following conceptual analysis is an attempt to place the findings from this study into a broader context that focuses on the classroom curriculum and has implications for teaching practice.

I would like to suggest that (1) controller teachers (i.e., those teachers for whom student participation is criterial) go beyond socialization and also include activities directed toward educational goals that emphasize the development of the person. According to Nyberg and Egan,

> a socialization curriculum is regulated by the criterion of direct relevance or utility to social praxis. So given the nature of our society, teaching children to read and write is justified on grounds of social utility, and learning such skills is an important component in the socialization process. Learning to read with refined critical discrimination and to write with style cannot be justified on grounds of educational value. Similarly, learning some local, regional and national history can be

> justified on socializing grounds - it is important for people to have a simple understanding of how their society functions and how it got that way. Developing a sophisticated historical consciousness cannot be justified on grounds of social utility, but may be justified on grounds of educational value (p. 2).

In their philosophical analysis of the distinction between the socialization curriculum and the educational curriculum, Nyberg and Egan argue that teachers who hold different sets of beliefs about human nature, the origin and meaning of culture, the relationships between society and the individual and other philosophical assumptions present a different curriculum to their classes. In addition, they argue that those who present primarily a socialization curriculum are indisposed to change their beliefs.

While this study of beliefs did not directly test teachers' beliefs on the philosophical constructs mentioned in the previous paragraph, undoubtedly such presuppositions underlie the instructional beliefs that were measured. Thus, one could logically suppose that a relationship obtains between the beliefs and behaviors of controller teachers and the socialization curriculum and the beliefs and behaviors of relator teachers and the educational curriculum. Figures 4 and 5 summarize and illustrate a set of relationships between controller and relator teachers and these two approaches to curriculum. As can be seen, the constructs used in this study to develop the teacher belief types parallel closely the distinctions made by Nyberg and Egan (1981) in their analysis of the two types of curricula - socialization and educational. Controller teachers tend to exemplify the socialization curriculum while relators exemplify the educational curriculum. The following descriptions help clarify some conceptual understandings concerning a relationship between teachers' instructional beliefs and their classroom

Figure 4: Relationship Between Controller Teachers and the Socialization Curriculum and Relator Teachers and the Educational Curriculum

	Controllers ⟶ Socialization Curriculum	Relators ⟶ Educational Curriculum
Instructional Beliefs (Bauch)	1. If the teacher is not in control of the classroom, students will get into trouble (t. control belief). 2. Students need to be thoroughly grounded in facts and knowledge about basic subjects before they can exercise independent thought (desired st. academic outcomes). 3. Student conformity and dependence on teacher authority and classroom expectations are critical (desired st. behavioral outcomes).	1. Student initiation and participation in planning classroom activities are essential to the maintenance of an effective classroom atmosphere (st. participation belief). 2. Schools should emphasize instruction which builds self-confidence, creativity, ability to think independently, and self-discipline (desired st. academic outcome). 3. Student autonomy and independence are critical (desired st. behavioral outcomes).
Philosophical Presuppositions (Nyberg and Egan)	1. Human nature tends to be "bad," therefore, people need to be constrained and pressured to do good. 2. Culture originates from "without" and is composed of objects such as books, art work, music and so forth and are arranged in a publicly determined hierarchy of value. 3. Society is the center of value.	1. Human nature tends to be "good," therefore, people are inclined to do good if unconstrained. 2. Culture originates from "within" and is comprised of a set of experiences such as a person's response to a book, art work and so forth and are arranged in an autonomous heirarchy of value composed by each individual. 3. The individual is the center of value.

Figure 5: Relationships Between Classroom Behaviors of Controller and Relator Teachers and Their Differing Approaches to Curriculum Issues

	Controllers ⟶ Socialization Curriculum	Relators ⟶ Educational Curriculum
Classroom Behaviors (Bauch)	1. Curriculum decisions rest on less fluid criteria such as curriculum guides, standardized test results, textbooks and commercial materials (decision making construct). 2. Use of fewer teaching strategies, repetition of conventional-type practices (lecturing, monitoring, seatwork) with less interaction among students and teachers (teaching methods construct). 3. Students feel a lack of freedom and choice in classroom activities and view the classroom learning environment less positively (student opinions construct).	1. Curriculum decisions are based on more fluid criteria such as student preferences, interests and abilities (decision making construct). 2. Utilization of a variety of teaching strategies, various grouping patterns, classroom discussions and more interactive-type activities (teaching methods construct). 3. Students feel they have more choice in class activities and perceive the classroom learning environment more positively (student opinions construct).
Approaches to Curriculum Issues/Teaching Preferences (Nyberg and Egan)	1. Unwillingness to risk removing constraints and providing greater freedom; preference for the "tried and true." 2. Traditional teaching methods, rigid classroom formats, structures and formalities. 3. Teacher domination and prescribed close-ended tasks.	1. Willingness to move from one structure to another; change and innovation are favored. 2. Wider variety of teaching methods; "open" education, flexible scheduling. 3. Student-initiated inquiry and open-ended project work.

teaching practices as explored in this study.

The top half of Figure 4 lists the main beliefs constructs used to identify controller and relator teachers. These constructs were derived from the Teachers' Instructional Beliefs Inventory and the Teacher Interview Schedule for each teacher type shown. Nyberg and Egan's main philosophical presuppositions concerning (1) human nature, (2) the origin and meaning of culture, and (3) the relationship between society and the individual are juxtaposed beneath the beliefs constructs. They base their distinction between the socialization and the educational curriculum on these presuppositions. As can be noted, the logical consistency between the teachers' beliefs and Nyberg and Egan's presuppositions is striking. As listed under items numbered "1," controller teachers responded positively to the belief statement: "If the teacher is not in control of the classroom, students will get into trouble." Underlying this construct is an assumption concerning human nature that is identified by Nyberg and Egan in the proposition: "Human nature tends to be 'bad,' therefore, people need to be constrained and pressured to do good." Similarly, in items numbered "2," controller teachers responded affirmatively to a statement concerning how knowledge and instruction become defined through the curriculum and are translated into educational goals or academic outcomes. Underlying teachers' beliefs about the academic outcomes of instruction is an assumption about the meaning of culture and how it becomes a part of a person's experience. Lastly, in items numbered "3," the kinds of priorities and expectations teachers have for students are undergirded by the assumptions they make regarding the relative value to be placed upon the individual in relationship to the society. Relator teachers can be described similarly."

Continuing on to Figure 5, the top half lists the main behavior constructs used to describe the activities of controller and relator teachers. These constructs were derived from the Teacher Survey, Student Survey, and the Classroom Observation Instruments. Beneath the behavior constructs are listed a set of behavioral preferences or approaches to curriculum issues posited by Nyberg and Egan. They speculate that the philosophical presuppositions described by them lead to a curriculum characterized by a set of teaching preferences. Again, the similarity between the teacher behaviors exemplified by controller and relator teachers in this study and the socialization and educational curriculum is striking. The parallel can be seen by comparing the identically numbered items in the upper and lower half of each column.

While the above comparisons and descriptions may help clarify some conceptual understandings concerning the relationship between teachers' instructional beliefs and their classroom practices, it does not strengthen our empirical understanding of these relationships. I tend to think, however, that there is a strong relationship. If so, educational change and school improvement will be increasingly facilitated at the practical level as we gain insight into teacher beliefs and use that information to help teachers reflect on their classroom behavior for the purpose of improving it.

FOOTNOTES

[1]See O.J. Harvey, "Beliefs and Behavior: Some Implications for Education," The Science Teacher 37 (December 1970): 10. Harvey describes his four major systems, extending from the concrete to the abstract, as follows:

System 1 is characterized by high concreteness of beliefs; high absolutism toward rules and roles; a strong tendency to view the world simplistically; a strongly positive attitude toward tradition, authority, and power; an inability to change and to think and act creatively under conditions of high involvement and stress.

System 2 representatives are only slightly less dogmatic, evaluative and inflexible than System 1 individuals; have strongly negative attitudes toward institutions, traditions, and the sound referents that serve as positive guides for System 1 persons; are low in self-esteem and high in alienation and cynicism.

System 3 beliefs reflect a strong outward emphasis upon friendship, interpersonal harmony, and mutual aid; are concerned with the attitudes of peers, social acceptance, and standards of behavior prescribed by particular referent groups; reflect the development of more antonomous internal standards than the previous two systems.

System 4 represents the most abstract and open-minded of the four belief systems; manifests itself in information seeking, problem-solving, higher ability to change. withstand stress, and behave creatively.

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Appendix A

1. Teacher Beliefs Inventory
2. Teacher Control and Student Participation Subscales

C. Please indicate the extent to which you agree or disagree with each of the following statements.
(Mark only one circle for each statement)

	Strongly Agree	Moderately Agree	Mildly Agree	Mildly Disagree	Moderately Disagree	Strongly Disagree
1. Good teacher-student relations are enhanced when it is clear that the teacher, not the students, is in charge of classroom activities	O	O	O	O	O	O
2. As long as they have control over teaching in their own classrooms, it is not necessary for teachers to have a voice in school administrative affairs	O	O	O	O	O	O
3. The learning of basic facts is less important in schooling than acquiring the ability to synthesize facts and ideas into a broader perspective	O	O	O	O	O	O
4. Learning is enhanced when teachers praise generously the accomplishments of individual students	O	O	O	O	O	O
5. There is too great an emphasis on keeping order in most classrooms	O	O	O	O	O	O
6. Learning is essentially a process of increasing one's store of information about the various basic fields of knowledge	O	O	O	O	O	O
7. The best learning atmosphere is created when the teacher takes an active interest in the problems and affairs of students	O	O	O	O	O	O
8. An orderly classroom is the major prerequisite to effective learning	O	O	O	O	O	O
9. Effective learning depends primarily upon the use of adequate instructional techniques and resources	O	O	O	O	O	O
10. Student initiation and participation in planning classroom activities are essential to the maintenance of an effective classroom atmosphere	O	O	O	O	O	O
11. Students must be kept busy or they soon get into trouble	O	O	O	O	O	O
12. When students are allowed to participate in the choice of activities, discipline problems are generally averted	O	O	O	O	O	O
13. When given a choice of activities, most students select what is best for them	O	O	O	O	O	O
14. In planning their work, teachers should rely heavily on the knowledge and skills students have acquired outside the classroom	O	O	O	O	O	O
15. Student motivation is greatest when students can gauge their own progress rather than depending on regular evaluation by the teacher	O	O	O	O	O	O
16. Students need and should have more supervision than they usually get	O	O	O	O	O	O
17. Before students are encouraged to exercise independent thought they should be thoroughly grounded in facts and knowledge about basic subjects	O	O	O	O	O	O
18. In the interest of good discipline, students who repeatedly disrupt the class must be firmly punished	O	O	O	O	O	O
19. The teaching of basic skills and subject matter is the most important function of the school	O	O	O	O	O	O
20. Proper control of a class is amply demonstrated when the students work quietly while the teacher is out of the room	O	O	O	O	O	O
21. Students are motivated to do better work when they feel free to move around the room while class is in session	O	O	O	O	O	O

Teacher Control and Student Participation Subscales

Subscale A: Teacher Control

1. Good teacher-student relations are enhanced when it is clear that the teacher, not the students, is in charge of classroom activities.

5. There is too great an emphasis on keeping order in most classrooms.

8. An orderly classroom is the major prerequisite to effective learning.

11. Students must be kept busy or they soon get into trouble.

16. Students need and should have more supervision than they usually get.

18. In the interest of good discipline, students who repeatedly disrupt the class must be firmly punished.

20. Proper control of a class is amply demonstrated when the students work quietly while the teacher is out of the room.

Subscale B: Student Participation

10. Student initiation and participation in planning classroom activities are essential to the maintenance of an effective classroom atmosphere.

12. When students are allowed to participate in the choice of activities, discipline problems are generally averted.

13. When given a choice of activities, most students select what is best for them.

15. Student motivation is greatest when students can guage their own progress rather than depending on regular evaluation by the teacher.

21. Students are motivated to do better work when they feel free to move around the room while class is in session.

Appendix B

1. Brief Description of Variable Subsets

2. Results of Ten Discriminant Analyses and One Chi Square Analysis on Classroom Variables

Brief Descriptions of Variable Subsets

1. Goals of Schooling	assesses the extent to which teachers agree that the school should emphasize basic subjects and skills, and their choice of the most important function their school should emphasize - social, intellectual, or personal development.
2. Student-Intended Learnings	assesses the emphasis teachers place on academic vs. behavioral goals for their students, and the extent to which conformity-type behavioral goals are emphasized over independence-type goals in the classroom.
3. Teacher Decision Making	assesses how much influence various curriculum sources have on teacher planning (i.e., curriculum guides, textbooks, and materials, teacher and student background), the frequency with which teachers use various kinds of information about students in planning individualized instruction (i.e., test results, past and present student behavior and performance), and the extent to which teachers use less formal (i.e., projects, reports, and demonstrations) evaluation procedures with students in contrast to formal ones (i.e., tests, quizzes and classwork).
4. Methods of Instruction (Teacher reported)	assesses the extent to which teachers use less commonly found instructional practices including materials use (i.e., audio visual and manipulative materials), teaching activities (i.e., class discussions, dramatizations, projects, experiments and interviewing), cognitive learning (i.e., creative thinking) and evaluation strategies (i.e., projects, reports, and demonstrations), and the extent to which individualized instruction is emphasized.
5. Grouping Arrangements (Teacher reported)	assesses the extent to which teachers emphasize small group over whole class instruction.
6. Methods of Instruction (Observer reported)	assess the extent to which students spend time in noninteractive-type activities (i.e., reading silently, writing, taking tests); the extent teachers use open-ended questions, lecture, use audio visuals, monitor students, provide students with corrective feedback.

7. Grouping Arrangements (Observer reported)	assesses both the type and variety of grouping patterns teachers use (i.e., whole class or small group).
8. Classroom Leadership	assesses the extent to which students lead or direct classroom activities, teachers work together cooperatively with students, and students initiate verbal interactions.
9. Classroom Expressive Behavior	assesses the amount of help, concern and friendship the teacher directs toward the students and the emotional tone characterizing the classroom - positive, negative, or neutral.
10. Classroom Learning Environment	assesses the extent to which students perceive the teacher and the classroom learning stituation as fostering choice and positive regard.

Table 1

Discriminant Analysis of Goals of Schooling Variables
for Teacher Belief Types
(n = 124)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Basic Subjects and Skills	.91	-.31	-.03
Intellectual Development	.46	.80	-.36
Personal Development	-.45	-.57	-.23
Social Development	-.07	-.06	.96
Teacher Belief Types	**Group Centroids**		
I	.36	.07	.04
II	.50	-.24	-.02
III	-.11	.33	-.02
IV	-.85	-.16	.01
Canonical R	.47	.22	.03
Canonical R^2	.22	.05	.009
Relative Percentage	84.75%	15.04%	.02%
Significance	.001	.444	.961

Table 2

Discriminant Analysis of Student-Intended Academic Learnings Variables for Teacher Belief Types
(N = 73)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Personal	-.99	.02	-.15
Social	.16	.88	.45
Intellectual	.68	-.70	-.23
Subject-Specific	.48	.17	-.86
Teacher Belief Types	Group Centroids		
I	.19	-.01	-.18
II	.34	.39	.12
III	.08	-.39	.10
IV	-.83	.12	.01
Canonical R	.39	.27	.13
Canonical R^2	.15	.07	.02
Relative Percentage	64.49%	29.57%	5.94%
Significance	.033	.155	.285

Table 3

Distribution of Student-Intended Behavioral Learnings Variables Among Teacher Belief Types

Teacher Belief Types		Type of Behavioral Goal			
		Conformity	Mixed	Independence	Total
I	N =	8	5	5	18
	Row %	(44)	(28)	(28)	(30)
II		5	4	1	10
		(50)	(40)	(10)	(16)
III		2	10	6	18
		(11)	(56)	(33)	(30)
IV		3	2	10	15
		(20)	(13)	(67)	(25)
Column Totals:	N =	18	21	22	61
	Row %	(30)	(34)	(36)	(100)

$x^2 = 16.0608$, $p < .01$ (6 df)

Table 4

Discriminant Analysis of Teacher Decision Making Variables
for Teacher Belief Types
(n = 124)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Student Preferences as Information	.56	.17	.41
Informal Evaluation Strategies	.52	.18	-.28
Student Background as an Influence	.49	.17	.08
Curriculum Guides as Influences	-.02	.62	.06
Formal Evaluation Strategies	-.33	.59	-.17
Information about Student Past Performance/Behavior	.12	.54	.08
Textbooks and Materials as Influences	-.26	.31	.18
Test Results as Information	.10	.27	-.17
Teacher Background as an Influence	.16	.11	.58
Information about Present Student Performance/Behavior	-.02	-.12	.47
Teacher Belief Types	Group Centroids		
I	-.74	-.14	.21
II	.36	.71	.06
III	-.31	-.06	-.34
IV	.81	-.47	.06
Canonical R	.52	.40	.20
Canonical R^2	.27	.16	.04
Relative Percentage	62.02%	30.84%	7.14%
Significance	.001	.14	.77

Table 5

Discriminant Analysis of Methods of Instruction (Teacher Report) Variables for Teacher Belief Types (n = 119)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Use of Uncommon Pedagogical Methods	.85	-.37	.39
Variety in Individualizing Instruction	.75	.40	-.53
Percentage of Individualization Time	.53	.84	.09
Teacher Belief Types	Group Centroids		
I	-.54	.10	-.07
II	.54	-.12	-.05
III	-.47	-.12	.07
IV	.45	.15	.06
Canonical R	.46	.13	.06
Canonical R^2	.21	.02	.00
Relative Percentage	92.84%	5.76%	1.40%
Significance	.001	.683	.503

Table 6

Discriminant Analysis of Grouping Arrangements (Teacher Report) Variables for Teacher Belief Types (n = 125)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Small Group Learning	.96	.14	.23
Whole Class Learning	-.29	.95	.13
Independent Learning	-.02	-.17	.99
Teacher Belief Types	**Group Centroids**		
I	-.57	-.03	.03
II	.32	.32	.01
III	-.17	-.03	-.06
IV	.54	-.25	.02
Canonical R	.41	.20	.04
Canonical R^2	.17	.04	.00
Relative Percentage	82.50%	16.94%	.56%
Significance	.002	.295	.688

Table 7

Discriminant Analysis of Methods of Instruction (Observer Report) Variables for Teacher Belief Types
(n = 80)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Utilization of Media	.78	.10	.21
Lecturing/Explaining	-.52	.51	.20
Noninteractive Activities	-.29	.29	-.07
Corrective Feedback	.32	.32	.02
Teacher Monitoring	-.43	-.31	.62
Open-Ended Questioning	.34	.24	.57
Teacher Belief Types	**Group Centroids**		
I	-.36	-.36	.04
II	.59	.05	.32
III	-.43	.40	.00
IV	.44	-.01	-.44
Canonical R	.42	.28	.25
Canonical R^2	.18	.08	.06
Relative Percentage	58.21%	23.90%	17.89%
Significance	.121	.367	.321

Table 8

Discriminant Analysis of Grouping Arrangements (Observer Report) Variables for Teacher Belief Types (n = 80)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Small Groups	.90	-.23	.37
Variety in Grouping	.72	-.03	-.27
Total Class Grouping	-.55	.41	.52
Independent Group	.63	.24	-.64
Teacher Belief Types	Group Centroids		
I	-.48	-.24	-.00
II	.99	-.09	.00
III	-.20	.19	.02
IV	-.10	.22	-.02
Canonical R	.49	.20	.02
Canonical R^2	.24	.04	.00
Relative Percentage	88.67%	11.27%	0.06%
Significance	.022	.810	.99

Table 9

Discriminant Analysis of Classroom Leadership Variables for Teacher Belief Types (n = 80)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Student-Directed Activity	.79	-.50	.35
Student-Initiated Interaction	.36	.74	.57
Teacher-Student Cooperative Activity	.67	.03	-.74
Teacher Belief Types	Group Centroids		
I	-.55	-.05	-.01
II	.57	-.19	-.01
III	-.07	.02	.03
IV	.31	.26	-.01
Canonical R	.41	.15	.02
Canonical R^2	.17	.02	.00
Relative Percentage	89.05%	10.76%	.19%
Significance	.080	.770	.859

Table 10

Discriminant Analysis of Expressive Behavior Variables for Teacher Belief Types (n = 80)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Teacher Support/Affirmation	.99	-.00	.05
Teacher-Student Positive Affect	.47	-.62	.60
Teacher-Student Neutral Affect	.05	.16	.72
Teacher-Student Negative Affect	-.02	.33	.60
Teacher Belief Types	Group Centroids		
I	-.04	-.31	.02
II	-.33	.13	-.14
III	-.13	.18	.14
IV	.60	.10	-.05
Canonical R	.31	.21	.11
Canonical R^2	.10	.04	.01
Relative Percentage	65.10%	28.10%	6.81%
Significance	.466	.652	.661

Table 11

Discriminant Analysis of the Classroom Learning Environment (Upper Elementary) Variables for Teacher Belief Types
(n = 38)

Discriminating Variables	Correlations Between Canonical Discriminant Functions and Discriminating Variables		
Functions:	1	2	3
Student Choice	.60	-.21	-.25
Student Competitiveness	.54	.32	.26
Teacher Task Orientation	.30	-.12	-.01
Teacher Favoritism	.11	.29	-.09
Classroom Dissonance	.04	-.22	.05
Student Decision Making	.44	-.25	-.62
Teacher Authoritarianism	.17	-.01	.60
Peer Esteem	-.08	.22	-.42
Student Affect	.04	.11	-.35
Knowledge of Results	.05	-.19	-.26
Teacher Belief Types	Group Centroids		
I	.13	.23	.59
II	.85	.71	-.38
III	-1.09	.01	-.18
IV	.62	-1.02	-.10
Canonical R	.64	.52	.36
Canonical R^2	.41	.26	.13
Relative Percentage	56.45%	31.17%	12.38%
Significance	.494	.742	.839