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ABSTRACT

The focus of this paper is the effect of teachers' expectations for their students on their own behavior, on the classroom environment, and on learning. Literature is reviewed and integrated, and an assessment system for matching individual students with learning environments is presented. Section one reviews literature on the following topics: the relationship of teacher expectations to school effectiveness; the formation, communication, and effects of teachers' varying expectations; and the status of research on teachers' expectations and teachers' attitudes and perceptions concerning their students. Section two, drawing upon pertinent literature, advances the concept of behavioral ecology as a guide to analyzing the behavioral demands of the environment (including teacher expectations) and their relationship to affected individuals. Section three reviews an environmental assessment system, Assessment for Integration into Mainstream Settings (AIMS), which was designed for use with handicapped students but which may be applicable to others. AIMS identifies behavioral demands of classrooms and assesses child behavior relative to these demands and thus the child's adjustment to teachers and peers. The system's four instruments and results from tests of the system are described. Following a brief conclusion are an 11-page bibliography, a sample AIMS instrument, and two tables of data. (MCG)

TEACHER SOCIAL BEHAVIOR STANDARDS AND EXPECTATIONS AS DETERMINANTS OF CLASSROOM ECOLOGY, TEACHER BEHAVIOR, AND CHILD OUTCOMES

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Introduction

In the past two decades, there has been a rising tide of public concern about the declining quality of the educational outcomes of public schools. Evidence for such a decline is readily apparent in decreasing performance scores on nationally referenced standardized tests, in an alarming increase in school dropout rates, in the breakdown of school discipline structures and codes, and in greatly reduced competence levels of high school graduates. The recently published report of the National Commission on Excellence in Education (A Nation at Risk 1983) provides elaborate documentation of our deteriorated collective educational efforts and proposes a number of changes to upgrade our system of schooling. Many of these changes (such as merit pay) may prove unpalatable to educators while others appear to affect dimensions of the schooling process (district and community conditions) that account for only indirect and limited influence on learner outcomes.

While public criticism has risen, our knowledge of effective schooling and the conditions associated with its achievement have at the same time shown a dramatic increase. The current knowledge base regarding effective schooling and teaching is more cohesive, replicable, and empirically supported than at any point in our educational history (Brophy 1979; Joyce, Hersh and McKibbin 1983; Brophy and Evertson 1981; Good 1981; Purkey and Smith 1983). Variables that influence achievement can be found at all levels of the schooling process, including the classroom, the school, and the district (Purkey and Smith 1983; Fisher, Berliner, Filby, Marliave, Cahen, and Dishaw 1980; Hargrove, Graham, Ward, Abernethy, Cunningham, and Vaughn 1981). On this point, however, Centra and Potter (1980) argue that student behavior and learner outcomes are most directly affected by student characteristics, teaching performance, and conditions within schools. In

their review of schooling and teacher effects, these authors suggest that a research focus on individual school conditions (rather than a comparison between schools) will be more productive in identifying those factors contributing most to student outcomes in learning and social adjustment.

Two related but independent lines of research have coalesced in the development of the current knowledge base on school improvement. These are (a) research on the characteristics of effective schools and identification of those factors that distinguish more effective from less effective schools, and (b) process-product studies that empirically relate teacher attributes to learner outcomes as measured by standardized tests. Research activities in these two areas have been especially intense and productive since the early seventies and have demonstrated conclusively that effective schooling and teaching-learning are not random processes but are consistently associated with predictable patterns of school and classroom conditions (Hersh and Walker 1983; Joyce, Hersh, and McKibbin 1983; Brookover, Beady, Flood, Schwitzer, and Wisenbaker 1979; Edmonds 1979; and Tomlinson 1980).

In the past decade, a relatively large number of studies of the characteristics of effective schools have demonstrated moderate degrees of convergent validity or overlap in findings (See Weber 1971; Edmonds 1979; Brookover et al. 1979; Rutter, Maughan, Mortimore, Ouston and Smith 1979; Coleman 1981; Mayeske, Wisler, Beaton, Weinfield, Cohen, Okada, Proshek, and Tabler 1972; Clark, Lotto, and McCarthy 1980; and Tomlinson 1980). The range of distinguishing characteristics in these studies includes (a) effective and consistent administrative leadership, (b) high teacher expectations for children's achievement, (c) orderly atmosphere, (d) frequent evaluations and monitoring of student progress, (e) school-wide task orientation, (f) high teacher efficacy, (g) high levels of academically engaged time, (h) clear goals and purposes, (i) strong instructional leadership and support from the

principal, (j) use of direct instruction procedures, (k) high levels of discipline, (l) tightly coupled curricula, (m) an emphasis on the acquisition of basic skills, and (n) a sense by students that they have some control over the school environment. Two characteristics are consistently identified across almost all studies of schooling effectiveness: (1) high teacher expectations for learning and achievement, and (2) a high level of discipline (Purkey and Smith 1983). While these two dimensions may be results, not causes, of effective schooling, they are both highly controllable by schools and are directly related to the two major ingredients necessary for student success in school: (1) to perform well academically and (2) to adapt behaviorally to the demands of the schooling process and to others (teachers, staff, and peers) who make up the school environment.

The primary methodology for studying effective schooling has been to use certain criteria (achievement scores, dropout rates, etc.) to select highly effective schools (positive outliers) and unusually ineffective schools (negative outliers). The selected schools are then studied intensively, using interviews, surveys, observations, case studies, and archival records analyses to identify differences that may account for the observed discrepancy on the original selection variable(s). This methodology has been criticized at some length by Purkey and Smith (1983) in a recent review of the schooling effectiveness literature. These criticisms relate to (a) the selection of false "negative" and "positive" outlier schools, (b) the narrow and relatively small samples used for intensive study of contrast effects, which increase the probability that some merely coincidental factors may be identified as distinguishing characteristics, and (c) the use of weak measures and procedural errors involved in the identification of outlier schools. In spite of these constraints, the author of this paper is impressed with the degree of overlap and convergent validity

represented in the findings of several investigators across studies, populations, and socio-economic status (SES) levels relating to factors associated with effective schools. This is an extremely important body of knowledge and provides a basis for school improvement efforts focused on far more relevant variables than those of the past.

Purkey and Smith (1983) make some observations about the knowledge base on effective schooling that provide some important structure for future research and activities in this area. For example, they caution against assuming that what produces positive schooling effects in one setting will necessarily produce the same effects in another. In the absence of longitudinal studies, it is not at all clear that a school designated as effective one year will remain so in the future. There is almost no information available on the process by which schools increase, decrease, or maintain their effectiveness. To date, no one has taken findings from the effective schools literature and reliably demonstrated that their application significantly changes the effectiveness of target schools. Questions raised by the authors on this issue include (a) How do different improvement strategies affect subpopulations in a school?, and (b) Are different strategies required to raise the scores of low-achieving schools than for high-achieving schools that are beginning to decline? These process variables must be studied carefully if efforts to implement the findings on schooling effectiveness are going to affect actual school practices and learner outcomes in a valid manner.

The other major line of research relating to schooling effectiveness has focused on the teacher and classroom as the appropriate unit of study. Investigations of this type, referred to as process-product studies, relate teacher attributes and classroom conditions to learner outcomes, as measured by standardized achievement tests (Brophy 1979). Over the last decade, this

research has identified a broad array of process variables correlated with learner outcomes. These include academic learning time (Rosenshine 1977, 1979; Rosenshine and Berliner 1978); the formation and expression of teacher expectations for academic performance (Good 1981; Brophy 1979; Brophy and Evertson 1981); the number, variety, and types of opportunities provided by teachers for active academic responding during the course of instruction (Greenwood, Delquadri, and Hall 1984; Delquadri, Greenwood, and Hall 1979; Heron, Heward, Cooke, and Hill in press); instructional processes used to teach academic content (Stallings 1977); teacher management styles and procedures (Emmer, Evertson, and Anderson 1980); direct instruction procedures (Becker 1977, 1978, 1984; Gersten, Carnine, and White 1984; Engelmann, Granzin, and Severson 1979); school climate (Anderson 1982), degree of continuity in academic signal systems used by teachers during instruction (Kounin and Gump 1974); and classroom organization (Brophy 1979). This listing is by no means exhaustive. However, as with the schooling effectiveness literature, this body of knowledge is largely descriptive in nature and has been derived primarily through the use of correlational and regression analysis procedures. The literature is currently devoid of convincing, experimental demonstrations in which this information has been used to increase the effectiveness of classrooom teachers in producing gains in student learning as measured by standardized achievement tests.

Research in the process-product domain seems to focus on either dyadic teacher-student interactions (Brophy and Good 1974; Good 1981; Silberman 1969; Cooper, Hinkel, and Good 1980) or on the impact of teacher behavior, classroom conditions, and instructional procedures on the collective behavior-performance of groups of students, such as classroom units (Greenwood, Delquadri, and Hall 1984; Stallings 1977; Gersten, Carnine, and White 1984; Anderson-Inman, Walker, and Purcell 1984). Much research

remains to be conducted on the definition, specification, and measurement of classroom process variables such as teacher attitudes, expectations, and perceptions; classroom atmosphere and social climate; and teaching style. Although these variables are positively correlated at varying levels of strength with academic achievement and measures of behavioral adjustment, the manner in which such high inference variables operate to actually influence learner outcomes is not well understood. Luce and Hoge (1978) argued that we cannot expect to make precise predictions from teacher expectations to student achievement until we have a more complete understanding of the mechanisms underlying this phenomenon. Brophy (1979) suggested that much more work should be completed on understanding classroom processes before attempts are made to experimentally manipulate teacher effectiveness variables. Finally, Centra and Potter (1980) note that research on the relationship between teacher characteristics and actual teacher behavior and the influence on that relationship on teacher-student interactions is a promising and needed area of inquiry.

The focus of this concept paper is on three variables in this general process-product domain. These are (a) teachers' specific standards and expectations for child social behavior in the classroom as measured by a self-report inventory, (b) teachers' repertoires of instructional and management behavior as determined by direct observations, and (c) child outcomes in the areas of social behavior, academic engagement, and academic achievement.

It is the author's contention that the standards and expectations teachers hold for children's social behavior are powerful determinants of classroom ecology and, ultimately, of the way in which teachers interact with and respond to children in their classes. As used in this context, teacher social behavior standards and expectations refer to (a) the relative importance or demand level that teachers place upon different classes of

appropriate child behavior (e.g. complying with teacher requests, cooperating with peers, making assistance needs known, following established classroom rules) and (b) the degree of teacher acceptance of maladaptive forms of child behavior in the classroom (such as disturbing others, refusing to share, stealing, or defying the teacher). There have been very few efforts reported that directly measure this variable and to relate it to teacher behavior and schooling outcomes. When a teacher's behavioral standards and expectations are ecologically incongruent (Copeland 1978) with the behavioral capabilities or inclinations of groups of students (or individual students), teacher-child conflict and impaired schooling effectiveness in both social adjustment and academic domains are possible. Kornblau and Keogh (1980) suggest that teachers develop standards or criteria of pupil teachability and measure individual children against a behavioral-attribute profile of the ideal student. If this process does occur (and the author believes that it does), its developmental implications are potentially very significant and could have a powerful impact on such factors as teacher-child interactions, academic response opportunities, classroom climate, teacher management strategies, instructional procedures, and, ultimately, academic achievement levels.

The author has developed an assessment methodology based upon social validation principles and procedures (Kazdin 1977; Wolf 1978) for measuring the behavioral standards and expectations that teachers hold for child behavior in the classroom. Teachers are asked to identify the behavioral standards they hold for children in general that may parallel the ideal student profile described by Kornblau and Keogh (1980). Child behavior attributes that respectively (a) facilitate teacher and peer-related adjustments, or (b) impair or actively compete with the same, are assessed through social validation procedures, such as teacher ratings of child

behavior attributes, using Likert scales. It is suggested that this measure may be an important predictor of teacher behavior and, ultimately, of child outcomes in behavioral and academic areas within the classroom setting. In addition, the dimensions measured in this process may partially account for classroom atmosphere, school climate, and the quality of teacher-student interactions.

The remainder of this paper is divided into four sections. Section 1 is a review of available empirical evidence relating to the behavioral expression of teacher expectations, attitudes, and perceptions, and their impact on both teachers and children. In section 2, the behavioral ecology literature is reviewed and evaluated as a conceptual framework for an assessment of the classroom setting and the demands it places on students. In section 3, the AIMS (Assessments for Integration into Mainstream Settings) assessment system is described and reviewed in terms of rationale, instruments, and outcomes. Finally, section 4 discusses implications of the system for school practices and research.

This concept paper has three major goals. These are (a) to review and integrate the empirical evidence relating to the behavioral expression of teacher expectations, attitudes, and perceptions, (b) to establish behavioral ecology as a conceptual frame of reference for carrying out research on teacher expectations, and (c) to describe an ecological assessment system for the reliable measurement of teacher standards-expectations for adaptive and maladaptive forms of child behavior in school. Teachers' behavioral expectations, in the author's view, are an important component of the social ecology of classrooms.

However, to date, school-based environmental assessment techniques and efforts have not systematically focused on teacher behavioral expectations in spite of the overwhelming evidence that (a) setting variables

have a major impact on one's behavior and performance, (b) the formation and behavioral expression of teacher expectations directly affect teacher-pupil interactions, and (c) high teacher expectations are consistently associated with effective schooling outcomes. Assessment efforts in this area have consistently suffered from inadequate conceptualizations, lack of specificity and problems associated with the use of high inference measures. Hopefully, this paper will highlight the importance of teacher expectations in the social ecology of classrooms and suggest methods for its precise assessment.

SECTION ONE
BEHAVIORAL CORRELATES OF TEACHER EXPECTATIONS, ATTITUDES, AND PERCEPTIONS

Expectations are defined by Good and Brophy (1978) as predictions about how individuals will behave or perform based on a set of beliefs that may or may not be supported by actual facts. Attitudes, in contrast, are affective or emotional responses to social stimuli and involve such dimensions as like/dislike, positive/negative and accept/reject (Brophy and Evertson 1981). Perceptions, as used herein, refer to awareness processes involved in acquiring information, making evaluative judgments, and developing attributional inferences (Harvey and Smith 1977; Kornblau and Keogh 1980). There is evidence that all three of these constructs have validity in accounting for teacher behavior in the classroom. Their specific effects on children and learner outcomes are far less well documented and understood. Evidence associated with each is reviewed below.

Teacher Expectations

Since the early seventies, perhaps more research has been conducted on correlates of teacher expectations than on any other variable relating to school and teacher effectiveness. The publication in 1968 of Rosenthal and Jacobson's Pygmalion in the Classroom stimulated a great deal of research interest in the role of teacher expectations in shaping both teacher behavior and child outcomes. However, numerous attempts by other investigators to replicate the effects of the artificially induced, self-fulfilling prophecy described by Rosenthal and Jacobson (1968) were unsuccessful (Brophy and Evertson 1981). In addition, Elashoff and Snow (1971) attacked their study on methodological grounds and cast considerable doubt on the credibility of the original findings.

Currently, there is considerable doubt that artificially induced

teacher expectations lead inexorably to a self-fulfilling prophecy of failure as described by Rosenthal and Jacobson (1968). However, the concept of self-generated or naturally occurring teacher expectations for student achievement grew out of the controversy surrounding publication of Pygmalion in the Classroom and stimulated a powerful program of descriptive and correlational research. Brophy and Good (1970, 1974) were the principal developers of the conceptual model and the methodology used to investigate this phenomenon.

The knowledge base regarding empirical support for the role of teacher expectations in both school and teacher effectiveness research is briefly reviewed below. Topics addressed are (a) teacher expectations as a correlate of effective schools, (b) the formation and behavioral communication of differential teacher expectations, (c) replications of the findings on differential teacher expectations, (d) the process model used to explain the effects of differential expectations, and (e) the current status of research on teacher expectations.

Teacher Expectations as a Correlate of Effective Schools. High teacher expectations for academic achievement have been consistently identified as a correlate of effective schools in studies reported since the early seventies. Studies by Weber (1971); Brookover et al. (1979); Edmonds (1979); Rutter, Maughan, Mortimore, Ouston, and Smith (1979); Coleman (1981); Wynne (1980); and Howey (1980) all reported high teacher expectations to be a distinguishing characteristic of effective schools. Perhaps because of the ethnographic nature of studies of this type, the presence of high teacher expectations was inferred rather than directly assessed (Purkey and Smith 1983). For example, Good (1981) used the Rutter et al. study to argue that appropriately high expectations stimulate teaching effort and student performance. However, he notes from Rutter et al. (1979) that teachers in

secondary schools in which students were achieving at higher levels and behaving more appropriately in the classroom "exhibited more behavior which communicated positive expectations for student performance than was the case for teachers in low achieving schools with comparable student populations" (p. 419). This arbitrary inference about the results of observer impressions would likely have low levels of interobserver agreement. It may be that high expectations in these studies are simply inferred by investigators and merely represent natural teacher responses to teaching high achieving students in such schools (Doyle 1977; Copeland 1978; Fiedler 1975). In any case, it would seem important to quantify direct and reliable measures of expectations at the school and teacher level. The definition and scaling of such measures present an interesting challenge to researchers working in this area. If available, however, they would make it possible to distinguish teachers with high and low performance expectations and to compare schools on this dimension.

The Formation and Communication of Differential Teacher Expectations. In 1970, Brophy and Good published a now classic study in which regular classroom teachers were asked to rank pupils in their classes along a high inference dimension of academic expectation. Boy and girl pairs from the high and low ranked segments of these continua were systematically observed over time using a complex, dyadic code that focused on teacher verbal behavior and teacher-student interaction.

The results indicated that the behavioral characteristics and academic performance of the students subjected to high and low expectations were markedly different. Essentially, the children for whom teachers held high expectations were well socialized to the ideal student role. The children for whom teachers held low expectations were not. Further, disadvantaged and low SES students were disproportionately represented in the

low and high groups.

Of greater interest, however, were the different teacher responses to the students for whom they held low and high expectations. Teachers systematically behaved in ways that maximized the achievement of students for whom they held high expectations and minimized the achievement of the students for whom they held low expectations. Research conducted over the past decade has identified numerous behavioral correlates (via direct observations) that distinguish teachers' treatment of these two groups of students (See Good 1981; Brophy and Good 1974; Brophy and Evertson 1981). Some of the more representative behavioral correlates are teacher praise rates, use of criticism, academic response opportunities, amount of feedback, and second chances provided for correcting errors. When the effect of differential teacher expectations for students is present, students experiencing high expectations are clearly favored, as a rule, on all these variables.

These results would appear to reflect the operation of systematic and selective bias on the part of teachers participating in studies of expectation effects. Brophy and Good argue that these differential expectations are self-generated and naturally formed through such sources as (a) observation and evaluation of students' performance over time, (b) test data, and (c) anecdotal records. Doyle (1977, 1979) suggests that the communication of differential teacher expectations does not represent bias but is instead a natural, adaptive response to the ecology of classroom conditions that include groups of students who have markedly different abilities and who vary tremendously in their teachability (Kornblau and Keogh 1980). The precise explanation of the form teacher expectations can take is perhaps of much less importance than the fact that they do exist and do affect teacher and child interaction.

Replications of The Findings On Differential Teacher Expectations. Although there have been numerous replications of the effects of differential teacher expectations by Brophy and Good as well as other investigators, there have also been, with some teachers, a number of failures to replicate these findings. In the early stages of this research, it was assumed that all or most teachers formed these differential expectations and expressed them. However, by 1974, Brophy and Good noted that there were strong individual differences among teachers in whether or not expectation effects appeared and in the nature of such effects when they were detected. Accordingly, they have classified teachers into three broad types on this variable: (1) reactive, (2) proactive, and (3) overreactive. The expectations of reactive teachers are shaped by students, not vice versa. Proactive teachers remain aware of their expectations and keep them flexible so that they change as students change. Overreactive teachers are like those characterized in the early expectation studies: they have strong and relatively rigid expectations that are less likely to change as students change. The differential expectations of overreactive teachers are most likely to have an impact on student work. Although interesting, this classification into three types does not facilitate discrimination between those teachers with high versus those with low expectations of students in academic and behavioral domains.

The Process Model Used to Explain the Effects of Differential Expectations. The model developed by Brophy and Good to explain the effects of teacher expectations and to guide their research has five basic steps. The model is as follows:

(1) The teacher expects specific behavior and performance from particular students in his or her class.

(2) Because of these expectations, the teacher behaves differentially toward students.

(3) Through this process, students learn what is expected of them and are affected in terms of their self-concepts, motivation, and levels of aspiration.

(4) If this treatment is consistent over time and students do not resist or change it in any way, it will shape their achievement and behavior. Students who experience high expectations will be led to achieve at high levels and those experiencing low expectations will decline in performance.

(5) Over time, students' achievement and behavior will conform more and more closely to the patterns or profiles originally expected of them.

This is a conceptually elegant model in terms of its face validity and logical appeal. However, as a process model for explaining the operation of differential teacher expectations, it remains theoretical and, as yet, empirically untested. In a review of the research on teacher expectations, Good (1981) makes the following observations about the status of research in this area: (a) the great majority of research has focused on step 2 of the model (i.e., do teachers treat students for whom they have high and low expectations differently?); (b) very little research has focused on step 5, (the effects of teacher expectations and behavior on students' achievement); (c) most of the research on teacher expectations has examined direct effects of differential teacher behavior rather than such indirect effects as student perceptions or inferences of teacher behavior; and (d) little research has addressed the question of how students can alter or control teacher expectations. Establishing the validity of this process model would require careful process studies involving sophisticated observation procedures conducted over time, the use of interview procedures, and regularly scheduled performance measures of groups of teachers and students showing powerful versus no differential expectancy effects. Most studies have addressed only a few elements of the Brophy and Good (1970) model at a time and thus have

not documented the process as a whole.

Garner and Bing (1973) proposed a process model, consisting of four elements, that is very similar to Brophy and Good's model. This model postulates that, under some circumstances, teacher expectations (A) lead to differential teacher behaviors (B). These differential teacher behaviors will occasionally produce distinctive or differential pupil behaviors (C), which may in turn lead to differential levels of achievement (D). Luce and Hoge (1978) reported one of the few studies that has addressed all the elements of a process model (specifically the Garner and Bing formulation) explaining the effects of differential expectations. Specifically, they were interested in whether the expectation-achievement effect is mediated by teacher and pupil behavior. They examined this relationship using a sample of 104 pupils from five classrooms and collected the following data: (1) direct observations of teacher-pupil interactions, (2) direct observations of pupil attentiveness or engaged academic time, (3) teacher rankings, (4) an I.Q. test, and (5) a math achievement test. In this author's view, the authors made a serious omission by not interviewing participating teachers and pupils after the study was concluded.

The results of the Luce and Hoge study did not support the conclusion that teacher expectations were a major determinant of pupil achievement. However, significant relationships were found between teacher rankings and some behavior categories, between teacher rankings and achievement, and between some behavior categories and achievement. The authors concluded that the results of their study neither supported nor rejected Garner and Bing's process model.

In examining the available research evidence, it is apparent that investigators have established significant relationships and linkages among each of the elements of both the Brophy and Good and the Garner and Bing

process models but via isolated studies that are essentially cross-sectional in nature. Longitudinal studies spanning at least one academic year would probably be required to document these process effects. In this author's view, the absence of information and empirical data on this question creates a major gap in the knowledge base regarding teacher expectations. Such information and data would make it possible to detect and even prevent the development of negative expectation effects in both preservice and inservice teachers.

Current Status of Research on Teacher Expectations. It is apparent that substantial research remains to be conducted on the specific effects of high and low teacher expectations on children's school performance and adjustment. Probable complex interactions between the intensity and duration of exposure to expectations and their correlates in both teacher and child behavior are not well understood. This would appear to be a proper domain for study by classroom ecologists (Doyle 1979; Copeland 1978; Gump 1977; Kounin and Doyle 1975; Schoggen 1978). However, these investigators have rejected the molecular approach to classroom methodology (i.e., reliance upon direct observations of categories of teacher and child behavior) used by researchers in the teacher expectations domain. Their favoring of global constructs assessed through narrative specimen records (Barker and Wright 1955; Wright 1967) or behavior setting surveys (Barker and Schoggen 1973) may not permit the detection and replication of relationships of this nature. This is a topic urgently in need of study and analysis with the most sophisticated and sensitive methodological tools available.

In reviews of the teacher expectations research, both Brophy (1979) and Good (1981) have called for additional process-to-process studies (for example, teacher expectations to teacher behavior to pupil behavior) before embarking on massive experimental studies of expectation effects. This

author concurs with this recommendation and suggests that research is also needed in this domain on the relationship between teacher expectations and teacher behavior directed to the class as a whole. Management of group process is a very important teacher skill (Emmer, Evertson, and Anderson 1980; Emmer and Evertson 1981) and would likely be powerfully influenced by the level and type of teacher expectations. In his review, Good (1981) noted that to his knowledge no studies have related teachers' expectations toward the class as a whole to student classroom behavior and affective or academic outcomes. Research of this type would make it possible to address more effectively the question of "person-environment" fit (Berkson 1978; Landesman-Dwyer, Stein and Sackett 1978; Berkson and Romer 1980; Romer and Heller 1983; and Apter and Conoley 1984), to lay an empirically based foundation for matching students to teachers and vice versa (Thelan 1967), and to select less restrictive placement settings for handicapped pupils that are more appropriate for their special needs and demands (Kornblau and Keogh 1980; Hersh and Walker 1983; Walker and Rankin 1983; Walker in press).

Assessing the effects of teacher expectations is an important effort and has implications for teacher selection, training, and research. As long as expectation effects are measured indirectly through teacher rankings of children's status on high inference dimensions such as achievement and behavioral adjustment (Brophy and Good 1974; Brophy and Evertson 1981) or are inferred from the types of teacher behavior displayed during the process of teaching (Rutter et al. 1979), it will be very difficult to (a) compare teachers meaningfully on this variable, (b) systematically relate the level of teacher expectations (high, medium, or low) to learner outcomes, or (c) determine expectation effects at the school level. Further, Good (1981) suggests that it is important to examine the expectations new teachers have about their ability to influence students' learning. This author would also

extend the notion that we need to know more about how expectations may change from entry into teaching to maturity in teaching and how these expectations may be related to teacher burnout, career change, turnover, and other personnel factors that have been plaguing the profession for years. In the absence of direct measures of such expectation effects, it is difficult to see how these goals can be achieved.

Teacher Attitudes

The strongest evidence for the formation and behavioral expression of teacher attitudes toward pupils in school was established in the early work of Jackson, Silberman and Wolfson (1969) and Silberman (1969) as well as in subsequent replications and extensions of their findings (Jenkins 1972; Good and Brophy 1972; Brophy and Good 1974; McDonald 1972; Nash 1973; Brooks and Wilson 1978; Brophy and Evertson 1981). Like the research on teacher expectations, these findings have been established primarily through a research model that demonstrates effects of differential teacher attitudes and behavior toward various students.

Jackson, Silberman and Wolfson (1969) empirically demonstrated that teachers hold differential attitudes about the children in their classrooms. These attitudes were associated with contrasting patterns of pupil behavior. Silberman (1969) showed that differential teacher attitudes and patterns of behavior were strongly associated with students' behavioral profiles. For example, Silberman asked a sample of third grade teachers to nominate one student from their classes who represented each of four teacher attitude groups. These groups were defined as follows:

> Attachment: If you could keep one student for another year for the sheer joy of it, whom would you pick?
>
> Concern: If you could devote all your attention to a child who concerns you a great deal, whom would you pick?

Indifference: If a parent were to drop in unannounced for a conference, whose child would you be least prepared to talk about?

Rejection: If your class were to be reduced by one child, whom would you be relieved to have removed?

Silberman used observation methodology to examine teacher behavior directed toward children nominated in each of the four nominated groups and to assess the nature and quality of teachers' interactions with them. The contrasting behavioral characteristics of students in the four groups and teacher behavior directed toward them are described below.

Children in the "attachment" group were highly socialized to the ideal student role and were seen as conforming, as fulfilling the personal needs of the teacher (volunteering, answering questions correctly, and so forth) and as being relatively undemanding. These students were praised more frequently than other students and were frequently held up to the class as behavioral models.

Students in the "concern" group tended to be low achievers who tried to complete assignments and follow classroom rules but who were generally unskilled academically and made extensive demands on the teacher for assistance. They required a great deal of supervision, and teachers often went out of their way to provide them with assistance.

Students in the "indifference" group had very low rates of initiating to and interacting with the teacher regarding academic matters. These students had few other distinguishing behavioral characteristics.

Students in the "rejection" group tended to be demanding, active, aggressive, and very difficult to manage effectively in the classroom. These students were low achievers, exhibited high levels of misbehavior, and had high rates of contact with the teacher--mostly over the issues of control and

redirection of their behavior.

These four student groups represented a behavioral ecology in each classroom that produced very different patterns of teacher behavior directed toward them. In a subsequent replication and extension of Silberman's (1969) findings, Willis and Brophy (1974) argue that teacher attitudes toward children in their classes are shaped almost exclusively by children's behavior and by the manner in which children respond to the teacher. The three major variables involved in this process seem to be (a) the student's general level of school success, (b) the degree to which the student rewards and responds positively to teachers, and (c) the extent to which the student conforms to classroom rules. As a rule, students in the "attachment" group are model students, well socialized, and pleasant for teachers to interact with. Students categorized under "concern" are compliant, dependent, and personally rewarding to teachers. "Indifferent" students are more passive and are not rewarding to teachers, while "rejected" students present very difficult control problems and apply powerful pressures to the management and instructional skills of teachers.

Teacher attitudes and behavior toward these four types of students is clearly reflective of the students' contrasting behavioral profiles. There has been extensive replication of this differentiated teacher response pattern over the past decade (See Brophy and Evertson, 1981). These findings suggest the following: (1) teachers are unusually open to the initiatives of "attachment" students, approve of their behavior, trust them, but do not usually show overt favoritism toward them; (2) teachers initiate high rates of contact with "concern" students, are very supportive and nurturing of their efforts, lower their expectations and demand levels for them, and assist them especially in developing improved skills; (3) "indifference" students appear to be seldom noticed by teachers and are responded to with

apathy, and teachers often seem unaware of their presence; and (4) the "rejection" students generate strong emotional reactions in teachers, are constantly under surveillance, are criticized frequently, and are subjected to powerful direct control measures such as warnings, threats, negative sanctions, or dismissal from class.

Although a minority of teachers exhibit differential initial expectations for students, a majority form and express differential attitudes towards students according to the students' behavioral profiles. Teachers seem to have clear preferences for different types of students and student behavior (Feshbach 1969), and they do not appear to suffer from guilt or remorse in acting upon such preferences (Brophy and Evertson 1981). Further, these differential attitudes and this correlated behavior are in evidence from the early beginnings of the schooling experience (Willis and Brophy 1974).

This body of knowledge has important implications for the behavioral mix of students in classrooms and represents a complex, ecological phenomenon. The evidence for two-way influence in the classroom and the impact that students exert on teachers is well established (Fiedler 1975; Doyle 1977, 1979; Doyle and Ponder 1975; Feldman and Prohaska 1979; Klein 1971). The evidence also suggests that teachers use very different teaching and management techniques (direct versus indirect) with different groups of students (Copeland 1978). Brophy (1979) has suggested that context seems to be an important emerging variable to consider in research on teacher effectiveness. Extremely important topics to consider in the design of effective schools would seem to be teacher attitudes, the student types and behavior that shape such attitudes and their collective impact on classroom atmosphere, school climate, classroom ecology and teacher-learner outcomes.

This author maintains that teachers also form standards and

expectations for children's social behavior in the classroom that are relatively independent of the behavior of specific children within given classes. The available evidence suggests that teachers vary considerably in their respective demand levels associated with these standards/expectations (Hersh and Walker 1983; Walker and Rankin 1983; Walker, Reavis, Rhode, and Jenson, in press) but show broad consensus and high levels of agreement in the types of pupil behavior they view as acceptable and unacceptable. Evidence also suggests that these standards and expectations are related to teacher behavior directed coward the class as a whole. This source of information could be extremely valuable in the mainstreaming process and in the design of optimal educational environments generally.

Teacher Perception

It is apparent that students' behavioral adjustment and academic achievement in school are influenced by a host of variables including (a) family history, (b) socioeconomic status (SES level), (c) child characteristics, skills and abilities, (d) situational or contextual effects, and (e) teacher expectations, attitudes, and perceptions. A large number of recent research studies on the accuracy of teachers' evaluative judgments of child behavior and performance suggest that teachers perceive pupil characteristics accurately (Boldstad 1974; Nelson 1971; Greenwood, Walker, Todd, and Hops 1979; Brophy and Evertson 1981; Jenkins 1972; Gresham 1981; and Green and Forehand 1980). Teachers appear to be most accurate in their perceptions of the child characteristics they have the most information about (academic performance and achievement). However, research has shown that teachers are also capable of making relatively accurate judgments about students' behavioral adjustment, sociometric skills, and social competence (See Boldstad 1974; Gresham in press; Green and Forehand 1980; and Gresham

1981).

Teacher perceptions are influenced not only by observable child characteristics but also by generalized child attributes that are either valued as appropriate to the school setting and the student role or are rejected as incompatible with either. Several researchers have investigated the criteria that teachers have used to make evaluative judgments in attribution studies. Willis (1972), for example, found that correlates of teachers' expectations for high-ranked students included attentiveness, self-confidence, the ability to work independently, compliance, school readiness, high general ability, and healthy social-emotional development. Feshbach (1969) found that teachers prefer students whose behavior patterns were characterized by conformity, passivity, acquiescence, and dependence as opposed to such attributes as flexibility, independence, assertiveness, and nonconformity. Similarly, a study by Morrison and McIntyre (1969) suggested that teachers preferred students who were orderly, were high achieving, presented no discipline problems, and were personally rewarding of and dependent upon teachers.

Rist (1970) was the first to suggest that teachers construct attributional images of what constitutes an ideal student. He argues further that these a priori images influence both teachers' perceptions of individual students and teachers' behavior and decisions related to the student. To date, there is very little data available to either confirm or deny Rist's assertions, but they appear to have considerable face validity.

Analysis of traditional referral practices in relation to behaviorally disordered children in school (Walker, Reavis, Rhode, and Jenson in press) and of negative teacher reactions to the mainstreaming and integration of handicapped children into less restrictive settings (Gresham 1982; Hersh and Walker 1983; Keogh and Levitt 1976; Larrives and Cook 1979;

and Ringlaben and Price 1981) strongly suggests that teachers often have well developed behavioral standards and correspondingly narrow tolerance levels for behavior outside the limits of such standards. In a recent chapter on teacher perceptions and educational decision making, Kornblau and Keogh (1980) argue that teachers' conceptions of child "teachability" serve as a standard against which the attributes of individual children are compared and that these conceptions influence teacher-pupil interactions and decision making. They suggest that each child is measured against an ideal standard of teachability and that teachers are likely to value, feel comfortable with, and have positive interactions with children who meet these standards of teachability. Conversely, teachers are likely to feel uncertain, uncomfortable, and even hostile toward pupils who differ from their view of the ideally teachable child. In support of this conceptualization, Kornblau and Keogh (1980) cite a study by Maddox-McGinty (1972) in which pupils rated low in teachability by their respective teachers had less social interaction with both teachers and peers than did higher ranked pupils. Additional research is obviously needed to establish the validity of Kornblau and Keogh's notion that individual pupils are each measured against an ideal standard of teachability and, if so, to identify the behavioral correlates of this process.

Kornblau (1979) developed a scale for assessing teachers' views of ideal pupils using the Likert scale to obtain teacher ratings of attributes that make up the ideal or model pupil. The scale consists of 33 descriptors that measure three primary dimensions: (a) cognitive-motivational behaviors, (b) school-appropriate behaviors, and (c) personal-social behaviors. Although data are not available on the psychometric properties, reliability, and validity of the scale, the authors (Kornblau and Keogh 1980) reported the data of a descriptive study using Kornblau's scale with a sample of preschool

through sixth grade teachers. The two major findings from this study are that (1) some attributes were highly valued by teachers across the full age-grade range sampled, while others were anchored to specific age-grade groups, and (2) as a rule, teachers in learning handicapped programs assigned the same values to pupil attributes as teachers in regular classes. The following descriptors showed no significant differences across the seven grade levels sampled in the study: happy, cheerful, confident, emotionally stable, liked by peers, well accepted, imaginative, understanding of others' feelings, able to use materials in an original manner, inquisitive, and questioning. This instrument has potential value in assessing atmosphere and climate in the classroom and provides a vehicle for taking into account how closely individual children approximate or diverge from normative expectations of regular classroom teachers (Kornblau and Keogh 1980).

An important dimension of teacher perception that is closely related to the criteria or standards that teachers use in making judgements about pupils are the attributional processes (Weiner 1977; Cooper and Lowe 1977; and Medway 1979) that teachers use to account for why children behave as they do (causal attributions). In this domain, Brophy and Rohrkemper (1980) found differences related both to the type of learning problems and behavior problems children exhibit and to the teachers' attributions concerning the causes of the problems. Problem ownership was divided between teachers and pupils. That is, challenges to the teacher's authority and control were considered teacher-owned problems, while peer social acceptance problems were viewed as student-owned. Further, teachers felt that students misbehaved deliberately and were capable of controlling their inappropriate behavior in relation to teacher-owned problems. In contrast, student-owned problems were viewed as not being under the child's control.

Teacher responses to teacher-owned problems that challenged their

control and authority were primarily negative and involved criticism, punishment, and negative sanctions. Teacher responses to student-owned problems involved concern, sympathy, encouragement, and counselling. Studies by Clarizio and McCoy (1976) and Kedar-Voivodas and Tannenbaum (1979) indicate that teachers react more strongly to teacher-owned problems, such as defiance or aggression, than to student-owned problems involving social withdrawal and low achievement (Brophy and Evertson 1981). Research by this author indicates that both regular and special education teachers assign much higher social validation ratings (Kazdin 1977, Wolf 1978) to child behavior that defines teacher-child adjustment status as opposed to peer-to-peer adjustment status (Hersh and Walker 1983; Walker and Rankin 1983).

When children enter the school setting, they are required to make two major social-behavioral adjustments. That is, they must meet the teacher's minimal behavioral and academic expectations and must also develop satisfactory interpersonal relationships with peers (Walker, McConnell, and Clarke in press). Children's ability to make these adjustments is heavily dependent upon their skills and social perceptiveness and is powerfully mediated by the teacher's perceptions of their behavioral attributes and the causes for them. There are numerous instances, especially in the context of mainstreaming, of children being placed in classrooms in which they cannot possibly meet the teacher's minimal behavioral standards. When this occurs, the consequences for the child are likely to be very severe and may lead to serious impairment of school adjustment and achievement.

In this author's view, teachers' standards and expectations for social behavior powerfully influence their perceptions of child attributes and their ability to tolerate and/or work effectively with specific children. It is possible that such standards and expectations also influence school climate, classroom atmosphere, and behavioral ecology. They may partially

predict teacher behavior toward the class as a whole and, ultimately, child outcomes.

Teachers' expectations are an extremely important part of the educational process, one that is not well accommodated in the design and operation of classroom environments. This is particularly true of the practices surrounding the mainstreaming of handicapped children into less restrictive settings. When integrating such children into less restrictive settings, it is essential that the receiving environment be assessed and a determination made as to the degree to which the handicapped child can meet the existing minimal behavioral requirements. On a larger scale, a similar procedure could be used in the optimal design of effective schools and classrooms and could make important contributions to identifying the proper mix of teacher and child characteristics that would facilitate a positive classroom ecology.

The evidence reviewed above on teacher expectations, attitudes, and perceptions provides convincing evidence regarding their influence on teacher behavior and, to a lesser extent, on child behavior and performance. Research in this general area appears fruitful and cost effective and has helped develop a better understanding of how schools function as social systems. It is surprising that ecological researchers have not played a more prominent role in the development of this knowledge base, since the context for these efforts appears to be defined by the basic principles and findings of behavioral ecology (Doyle 1977; Barker and Gump 1964; Barker and Schoggen 1973). In section 2 below, classroom ecology is reviewed as a conceptual framework for an assessment methodology that provides for the study and analysis of the social behavior standards and expectations of classroom teachers and their behavioral correlates.

SECTION TWO
BEHAVIORAL ECOLOGY AS A FRAME OF REFERENCE
FOR ASSESSMENT OF
THE BEHAVIORAL DEMANDS OF CLASSROOM SETTINGS

The generic term ecology (Sells 1966) is defined as the scientific study of organism-environment interaction(s), and, in this sense, is a branch of the biological sciences. The term human ecology emerged as a sociological concept and was adapted by Barker and his associates (Barker and Schoggen 1973; Gump 1977; Barker 1968) for use in the study of behavior settings and their impact on persons within them (Rogers-Warren and Wedel 1980). Human ecology consists of physical and behavioral components. Physical ecology refers to the physical components of environments that mediate, constrain, and affect human behavior. In classrooms, these components would include such things as the room temperature, the room size, physical elements in the setting (such as tables and chairs), and the number of persons present. Behavioral ecology includes the study of the influence of interpersonal variables (social support networks, teacher-student interactions, friendship patterns) and environmental arrangements (seating charts, classroom organization) upon behavior. This discussion focuses on behavioral ecology. Though most ecological variables (when investigated in the context of school effects studies) have shown low or inconsistent relationships with student outcomes (Anderson 1982), they continue to form an important frame of reference fo. research on the schooling process.

It should be noted that while there is broad agreement that the science of human ecology refers to the study of the impact of environment upon human behavior and the process of adaptation (Price 1965; Sells 1963), investigators vary greatly in their description, classification, and analysis of environmental variables as well as in the manner they represent ecological effects within indices of human functioning (See Moos and Insel 1974; Endler and Magnussen 1976). For example, Koffka (1935) originally distinguished

between the "geographical" and "behavioral" environment. Pervin (1968) refers to the non-interpersonal versus interpersonal environment. Finally, Chein (1954) describes geo versus ego behavioral environments. Each of these bi-polar categorizations share common elements with the others and refer, essentially, to the impact of non-social versus social variables on human behavior and functioning.

Ecologists also distinguish between the objective, measurable environment in terms of its physical reality and its perceived reality (Stern 1964; Pervin 1968). Physical reality refers to the objectively determined, observable influence of environmental variables on behavior that can be empirically documented. Perceived reality refers to the individual's reactions (attitudes, perceptions, expectancies) to environmental events, which are more difficult to empirically document with reliability. The focus of the present discussion will be on the domain of behavioral ecology as it is expressed in terms of both physical and perceived reality.

Characteristically, ecologists have focussed almost exclusively on the description and explanation of behavior and on the environmental forces that explain and account for it, but have expressed correspondingly little interest in the use of such information to alter or structure environments to facilitate more adaptive functioning (Rogers-Warren and Warren 1977). Behavioral ecology offers a theoretical and methodological framework for analyzing social and physical environments and for generating knowledge that can have a profound impact on the design and alteration of educational environments as well as the selection of appropriate placement settings. The prescriptive or programmatic use of ecologically derived findings will also be a focus of this discussion.

Behavioral ecology refers to the environmental impact on behavior and the interaction of individual and environmental characteristics. More

specifically, it is concerned with (1) the degree of congruence between the individual's needs, capabilities, and aspirations and the environment's demands, resources, and response opportunities; (2) the manner in which different environmental conditions and arrangements force accommodations in the behavior of individuals within them; and (3) the reciprocal nature of individual-environmental interactions and influence processes. Behavioral ecology provides a framework for (a) the analysis of the individual's adaptation to the environment and (b) an assessment of the impact of environmental forces upon the individual.

Swap, Prieto, and Harth (1982) have suggested three reasons for why the ecological model is relevant to the study of schools and classrooms and for how it has improved our understanding of the behavioral processes operating in educational environments. First, the ecological model highlights the importance of studying natural settings and developing formats for conducting scientific observations within them. Second, it has provided a structure and a technology for measuring the effects of environmental variables on behavior. Finally, it has facilitated attempts at using such information to analyze educational environments and design them more effectively. To date, the contributions of behavioral ecology in these areas have been more conceptual than methodological. Nevertheless, this kind of paradigm and the structure it provides are important for developing approaches to the assessment of settings and environments and their effects upon individuals exposed to them.

Moos (1974) has provided an important organizing framework for the ecological classification of environments in terms of specific attributes and their effects on the behavior and performance of individuals within them. According to this schema, environments may be conceptualized and classified in terms of six levels or types: (1) ecological attributes, which include geographical and meteorological variables as well as architectural and

physical design variables; (2) behavior settings which have both ecological and behavioral properties and are concerned with naturally occurring phenomena; (3) organizational structure as defined by size, levels, staffing ratios, line and staff hierarchies and so forth; (4) variables encompassing the collective, personal, and behavioral characteristics of the setting's inhabitants; (5) psychosocial characteristics and organizational climate; and (6) functional analysis of reinforcement contingencies within specific environments and settings. Moos admits that these categories interrelate and overlap; however, each has been shown to have important effects on individual and/or group behavior. Of particular relevance to the study of school environments is the body of knowledge related to a) the behavior setting, b) the psychosocial characteristics and organizational climate of same, and c) environment-specific reinforcement contingencies. From an ecological perspective, the conceptual and theoretical work in these three domains could enrich existing knowledge of the schooling process by providing additional explanatory constructs for the interpretation of available findings. In addition, adoption of an ecological focus could generate important new directions for future research on the schooling process.

The ecological model concentrates on molar variables as explanatory constructs and uses molecular analysis to flesh out details of behavior-environment interactions (Barker and Schoggen 1973). As noted earlier, this may partially account for why ecological variables characteristically show weak and inconsistent relationships with student outcome variables in the input-output studies of school effects conducted so far (Anderson 1982). Wolf (1965) has criticized the global variables relating to social status and economic well being (such as parents' occupation, family structure, educational level, family size, and ratio of crowding in the home) that are commonly used in many outcome studies of schooling effects. They suggest these variables are too general and

non-specific to account for much variance in the intellectual performance of children. In empirically based studies, these authors have demonstrated that much stronger relationships can be obtained between environmental and individual performance variables through the use of specific and relevant measures of environmental variables that directly influence intellectual/academic performance. Their convincing demonstrations of the value of more specific measurement procedures appear to have broad applicability to the field of ecology in general and to behavioral ecology in particular.

The field of behavioral ecology offers a number of constructs and principles that are germane to the study of school-based, contextual variables and their influence on teacher and child behavior. These include (1) the concept of the behavior setting and its influence on the behavior of individuals within that setting; (2) the interdependence of behavior, persons, and environments; (3) the concept of behavioral demands across different settings and environs; (4) the person-environment fit or match; (5) the dimension of discordance, or lack of congruence, as an explanation for adjustment failure, deviance, or inadequate performance within specific settings; (6) the assessment of environments; and (7) the process of adaptation. Each is discussed briefly below.

Behavior Settings

A behavior setting consists of three elements: (a) a physical milieu, (b) a program of activities and inhabitants, and (c) a location in time and space (Barker 1968; Gump 1971, 1977). The behavior setting serves as a major unit of analysis in ecological studies of environmental influences on performance. Ecologists examine the effects that settings exert in mediating and constraining behavior. Ecologists argue that human behavior is controlled by the nature of the setting and the program of activities that

occur within it.

Behavior settings are classified by ecologists in terms of their size and other salient characteristics. A major focus of setting-based research is on the role of extraindividual factors in accounting for behavioral differences. For example, ecological studies have been conducted on large and small towns (Barker and Schoggen 1973), large and small churches (Wicker 1969), and large and small schools (Barker and Gump 1964). Such studies seek to establish the interdependence of the individual-environment relationship by demonstrating that the behavior of individuals varies predictably from setting to setting and that different individuals within the same setting display similar behavior (Holman 1977).

There continues to be a lively debate in psychology about which accounts for the greater variance in human behavior -- person-specific traits or settings and situations (Mischel 1968, 1969, 1976; Allport 1976). This debate is by no means resolved, but it is widely acknowledged that setting-specific variables do exert a very powerful influence on human behavior (Moos 1974; Moos and Insel 1974; Endler and Magnussen 1976). Nevertheless, the conceptualization and development of taxonomies of individual attributes has far outstripped similar efforts to classify situations and settings. These efforts have been further hampered by the traditional absence of reliable, specific measures of settings and environmental variables.

Behavior settings can range in size from small groups or units to extremely large and complex organizational or community structures. The notion of the behavior setting is particularly valuable in the study of

individual variability over time. The stimulus conditions, social agents, contingencies, physical arrangements, and adult behavioral expectations that exist in specific settings can play a powerful role in accounting for such variability (Mischel 1968, 1969; Alker 1972; Bem 1972).

The Interdependence of Behavior, Persons, and Environments

Gump (1977) suggests that there are three types of interdependence in the molar units of behaviors, persons, and environments. These are (1) behavior to behavior, (2) person to environment, and (3) environment to environment. Changes in one of these elements will inevitably affect other system elements and alter them in some fashion. For example, if a behavior change program were developed to reduce or accelerate certain classes of student behavior, correlated changes of an unplanned and unanticipated nature would also be produced. Ecologists argue that such changes may be deleterious and should be monitored carefully.

Willems (1974) has argued forcefully that behavior analysts and other users of behavioral technology have implemented behavior change procedures in an unplanned and indiscriminate fashion with little regard for the possible undesirable side effects that these efforts may produce. He suggests that such procedures are quite intrusive and not always beneficial when the individual's total ecology is taken into account. He argues persuasively for the adoption of an ecological perspective in the behavior change process in order to assess the presence of unplanned correlates of powerful intervention procedures. Willems (1974) further suggests that such developments are inevitable given the interdependence of behavior, person, and environment and are not adequately measured by the narrowly defined observation code categories commonly used by behavior analysts.

In a program of research designed to investigate the relative

contributions of settings and individuals to the interdependence of person, behavior, and setting in social interaction processes, Raush and his associates (Raush, Dittman, and Taylor 1959) concluded that (a) persons differ from one another across a variety of situations, and (b) situations evoke characteristic patterns of social action across a variety of persons. However, the interactive effects between the individual and the behavior setting or situation contributed far more information about behavior than did the sum of the individual components. This generalization enjoys a broad consensus among ecological psychologists and has strong empirical support.

The focus on teacher-student interactions (and the reciprocal influence processes embodied therein) by such investigators as Brophy, Good, and Evertson has illustrated the value of incorporating such interdependence into paradigms for research on teaching. Their more recent work involving attribution and the role of classroom activity settings and contexts (Brophy and Evertson 1981; Brophy 1979) in the teaching-learning process has greatly increased the power of their methodology and the value of their findings.

Behavioral Demands

The ecological concept of behavioral demands presented or represented by the social environment is very useful in the study of school settings. Doyle (1977) and Copeland (1978) argue persuasively that patterns of social influence in the classroom are two-way in nature and that teachers are influenced as much by students as students are influenced by teachers. It is suggested that teacher behavior may be as much affected by student behavior as it is the cause of student behavior. Copeland (1978) presents evidence that teachability levels and behavioral characteristics of groups of pupils have a profound effect upon the teaching reportoires (style, management practices, control techniques) of beginning teachers.

In this relationship, teachers are presented with a powerful set of demands simply by having to manage and instruct x number of students possessing characteristics within an inflexible time frame. The nature and complexity of these demands is largely determined by the behavioral characteristics and teachability levels of students who comprise the classroom unit. Kounin and his associates have studied the group process variables that are consistently associated with high levels of work involvement and effective classroom management (See Kounin 1970; Kounin and Doyle 1975; and Kounin and Gump 1974). Effective group management is consistently associated with the following variables: (a) with-it-ness, (b) overlapping, (c) smoothness and momentum, (d) group alerting, (e) accountability, (f) valence and challenge arousal, and (g) seatwork variety and challenge. Teachers who are skilled in the techniques of group process, management, and instruction are able to negotiate more successfully the complex demands represented by heterogeneous groups of students who vary in general teachability. The findings of Kounin and his associates have consistently withstood the test of replication by independent investigators (Brophy and Putnam 1979; Evertson and Anderson 1979).

The teacher may be the single most important ecological variable in the classroom since she or he is largely responsible for controlling and mediating all aspects of the classroom environment. In this context, teachers place a variety of very intense behavioral and performance demands on both individual students and the class as a whole. Students have varying degrees of behavioral inclinations to accept and conform to these demands. The processes governing the negotiation of these often conflicting sets of demands and inclinations define, to a large extent, the nature of classroom ecology.

The Person-Environment Fit or Match

One of the more powerful contributions of behavioral ecology to the study of classroom settings is the notion of person-environment fit or match. That is, the individual's level of adaptation to a given setting is a function of the match between the characteristics of the person and the environment. The ecological term for this phenomenon is synomorphy.

The concept of person-environment fit assumes there are environments (interpersonal and noninterpersonal) that more or less match the characteristics of each individual's behavioral profile, attitudes, needs, and personality (Pervin 1968). A "match" or "best fit" (Jahoda 1961) of the individual to the environment is indicated by high performance, satisfaction, and minimal stress levels. A "mismatch" or "lack of fit" results in decreased performance, dissatisfaction, and high stress levels. Intagliata (1983) notes that while the notion of best fit or match is conceptually appealing and logically consistent, there are few empirical studies that have documented the correlates of either satisfactory or unsatisfactory person-environment fits.

Two parallel movements in the past decade have provided excellent but largely unrealized opportunities to study person-environment fit and to develop methodologies for facilitating them. These are (a) the mainstreaming and social integration of handicapped pupils into less restrictive classrooms in public schools and (b) the deinstitutional movement with its corresponding placement of developmentally disabled (DD) individuals into community settings (including group homes, sheltered and/or competitive employment settings, and so forth). A decade of research on the effects of these social movements dramatically illustrates the behavioral consequences of inadequate person-environment matches (Gresham 1981, 1982; Landesman-Dwyer 1981; Willer

and Intagliata 1981; Berkson and Romer 1980). Results of these studies indicate that mainstreaming and community placement of handicapped and developmentally disabled persons are often associated with such negative outcomes as peer rejection, lack of social contact and involvement, depression, emotional trauma, and increased mortality.

A major cause of these negative outcomes is the handicapped or disabled individual's inability to cope effectively with the demands and pressures that exist in such unfamiliar and complex settings. Followup studies of community-placed DD persons consistently indicate that knowledge of the conditions of postinstitutional community settings is a far more powerful predictor of successful adjustment than is knowledge of the individual's personal characteristics or behavioral response to the institutional environment prior to placement (Landesman-Dwyer 1981). Studies of conditions in the less restrictive classroom settings into which handicapped children are placed would in all likelihood yield similar findings. The literature in these two areas is replete with examples of failures to properly match handicapped and disabled individuals with supportive environments, to provide the training and support they need to access the normalizing benefits of such environments, and to manage the transition process effectively.

A failure to effect a match can be attributable to both person-specific and environment-specific factors. Person-specific factors would include skill deficiencies on the part of the individual, a violation of social norms, and expectations or behavioral demands that are excessive. Environment-specific factors would be represented by inconsistency of adult expectations across all settings, by settings that have limited choices, and by settings that have unreasonably high or inappropriate behavioral demands. In order to facilitate maximal person-environment matches via placement

processes, it would be necessary to attend carefully to three sets of variables: (1) the demands, expectations, support structures, and resources that exist in the receiving settings; (2) the skill level and coping ability of the person to be placed in the setting; and (3) the process used to transition the person from one setting to another. In this author's view, the failure to attend carefully to these variables contributes substantially to the adjustment problems experienced by handicapped and disabled persons vis-a-vis the mainstreaming and deinstitutionalization movements.

Discordance

The notion of discordance or lack of congruence, a central concept in behavioral ecology, is defined as the disparity between an individual's abilities and the demands or expectations of the environment in which she or he is placed (Apter and Conoley 1984). More specifically, ecology focuses upon the degree of congruence between an individual's needs, capacities, and aspirations and the environment's resources, demands, and response opportunities (Coulton 1979; Intagliata 1983). Points of discordance are the discrepancies or sources of conflict between these two sets of variables.

Lack of congruence, or discordance, is a major explanation for the failure of many individuals to adjust satisfactorily to new environments or settings. Wicker (1972) has commented at length on processes that mediate behavior-environment congruence. He suggests that the environment can be most usefully viewed as a network of social roles and norms with attendant expectations and rules for appropriate behavior. Behavior settings within the environment are characterized by the existence of regularly occurring and expected behavior patterns. Attempts are made by both adults (teachers, supervisors) and peers (classmates, coworkers) to make individuals conform to the social norms upon entering such settings. When such socialization

efforts fail or an individual is so disruptive or incompetent as to exceed existing tolerance limits, a characteristic response is to remove the person from the setting. Studies have shown that "reinstitutionalization" and reverse mainstreaming occur most often in the presence of persistent maladaptive behavior of an antisocial, aggressive nature (Landesman-Dwyer 1981; Sutter, Mayeda, Call, Yanagi, and Yee 1980). Thus, the social norms, behavioral expectations, and tolerance limits that are associated with specific behavior settings can play a powerful role in determining the degree of congruence and, ultimately, the adjustment success of individuals who enter them.

Wicker (1972) proposes a social exchange theory to account for the selection of settings an individual will enter based on that person's ability and/or desire to perform the existing patterns of behavior regularly expected in the setting(s). He suggests that a person is likely to enter settings that permit personally enjoyable or valuable behaviors and to avoid those settings that do not. Similarly, on the basis of its goals, standards, or functions, a setting may select from among its occupants certain persons who are to leave and others who are to stay. Wicker (1972) argues that if one wished to predict whether a person would remain in a given setting, it would be necessary to obtain approval ratings of the target individual's behavior(s) by the setting's occupants and to assess the degree of congruence with the expected behavior patterns.

Often individuals have very limited control over the settings where they are placed--especially within school and institutional environments. Very often, individuals are placed in relatively nonsupportive environments where they either cannot or will not conform to the expected patterns of behavior. When this occurs, the mismatch is obvious and may be a precursor to serious adjustment problems. This may, in turn, lead to expulsion from

the setting--a characteristic response of school systems to many behavior-disordered school children.

The notion of environmental press (Stern 1964) can also be related to congruence and the match between setting expectations and individual behavioral characteristics. The concept of press includes both conditions that represent impediments to fulfilling a need and those that are likely to facilitate its expression. Stern suggests that these conditions establish the climate or atmosphere of a given setting.

In the classroom setting, environmental press in the behavioral domain would be represented by those types of child behavior that the teacher values and perceives as facilitating school success and by maladaptive behaviors the teacher judges as unacceptable and disruptive of classroom atmosphere. Recent research by the author (Walker and Rankin 1983; Walker, Reavis, Rhode, and Jenson, in press) indicates high levels of agreement across the range of teachers and classrooms regarding the content of expected patterns of behavior. Children who could not meet such minimal behavioral expectations would likely view the classroom setting as an aversive environment and would be clearly "mismatched" in relation to it.

The Assessment of Environments

In recent years, there has been a strong movement toward assessment of settings as a corollary to the assessment and understanding of individuals' behavior (Intagliata 1983). It is broadly agreed that much greater understanding of behavior can be achieved through assessment of both the individual and the setting(s) that she or he functions in or has been exposed to. Recent investigations indicate that environmental variables are better predictors of how individuals will behave than are individual characteristics or traits (Landesman-Dwyer 1981; Hull and Thompson 1980; and

Landesman-Dwyer, Berkson and Romer 1979). Some investigators have argued that, instead of being assessed out of context, persons should be evaluated in terms of the settings or environments in which they are expected to function as well as in terms of their personal attributes (Landesman-Dwyer 1981). A number of investigators have argued for an interactive approach to assessment of this type that lays the groundwork for an empirically based match between individual and environmental characteristics (Sundberg, Snowden and Reynolds 1978).

A number of instruments have been developed to measure social climate and different aspects of the environment (See Anderson 1982 for a review of instruments for assessing social climate). Other instruments used for ecological assessment purposes are (a) the SOMPA scales of adaptive behavior (Mercer and Lewis 1978), (b) Wahler, House, and Stambaugh's (1976) "Ecological Assessment of Child Problem Behavior," (c) PASS (Program Analysis of Service Systems) by Wolfensberger and Glen (1975), (d) the Residential Management Survey by Eyman, Silverstein, McLain and Miller (1977), and (e) the Family Environment Scale (FES) and the Community Oriented Programs Environment Scale (COPES) by Moos (1972). A major limitation of these instruments is that they do not provide for the assessment of individual and environmental variables on similar dimensions. Thus, it is impossible to assess an individual's status in terms of the environmental variables being measured.

Swap, Prieto, and Harth (1982) suggest that the purpose of ecological assessment is to identify the nature and causes of the faulty adaptation between the child and the environment. This requires assessing the child, the settings the child inhabits, and the interaction between them. It is a very complex but essential form of assessment in the schooling process generally and especially in relation to pupils who are experiencing learning and adjustment problems. Intagliata (1983) has reviewed environmental

assessment efforts over the past decade and found them deficient on a number of dimensions. He notes, for example, that most available environmental assessment instruments are not multi-dimensional in nature and thus are too narrow in the dimensions they assess. Further, most such instruments were not designed for the task of enhancing person-environment fit and thus do not provide for relating environmental characteristics to individual needs. He calls for the design and validation of instruments and assessment methodologies that can accomplish these goals.

The author has designed an assessment system of this type which will be described in section 3 below. It includes all of the elements described by Intagliata (1983) as necessary for enhancing person-environment fit.

The Process of Adaptation

Ecologists view adaptation as the basic process used by individuals to accommodate the requirements of environmental settings (Sells 1963). Adaptation is a joint function of individual traits/characteristics and the environment, so ecologists assume that the adaptative process can be measured in the same way across a range of environments and traits (Berkson 1981). Mortality, fertility, academic success, and income level have all been used as measures of adaptation. For handicapped individuals, degree of participation in society and engagement in productive work have been identified as appropriate measures of adaptation (Berkson 1981). In the developmental disabilities area, lack of reinstitutionalization has historically been a major criterion for measuring adaptation (Landesman-Dwyer 1981). Walker (1983) has identified social development and academic achievement as appropriate indices of successful adaptation to the school setting.

Procedures for facilitating adaptation have differed somewhat in the areas of developmental disabilities and special education. In the former,

two major approaches have been used: (1) skills development and training and (2) ecological support, including the creation of new supportive environments within community settings and the alteration of existing environments (Romer and Heller 1983). Berkson (1981) suggests that environmental alteration is a far more promising approach than skills training--a position that is clearly open to debate. In the latter area, special education, the mainstreaming movement has focussed on placing handicapped children within existing educational settings and on pressuring the receiving environment (i.e. teachers) to accommodate the unique needs and requirements of the target handicapped child. The available evidence suggests that this strategy has very serious shortcomings and has not been generally effective (Hersh and Walker 1983; Glass 1983).

The AIMS assessment system, to be described below, provides for the assessment of school environments using many of the ecological concepts and principles described above. It assesses the receiving environment and child behavioral status on the same dimensions and generates information that makes it possible (a) to select less restrictive placement settings and (b) to systematically prepare the target child to meet the minimal behavioral demands that are expected in these settings. AIMS has the potential to significantly maximize person-environment fit and, in the process, to facilitate the adaptation of handicapped children to less restrictive educational settings.

SECTION THREE
THE AIMS ASSESSMENT SYSTEM
RATIONALE, INSTRUMENTS, AND OUTCOMES

Rationale

Assessments for Integration into Mainstream Settings (AIMS) was originally developed for integrating handicapped children into less restrictive settings; however, this assessment system appears to have broader applications in matching students and placement settings (Walker, in press). AIMS assumes that teachers' standards and expectations of child behavior in general (a) constitute important determinants of general classroom atmosphere and behavioral ecology, (b) are used as criteria for judging the general teachability levels and behavioral attributes or profiles of individual students, (c) serve as referrents in teacher decisions regarding whether the child is appropriately placed in the classroom, and (d) are correlated with forms of teacher behavior directed toward the class as a whole. AIMS gives a direct measure of the teacher's standards and expectations for child behavior in general, provides for an assessment of child behavior in relation to those standards or expectations, and, following social integration, assesses the target child's teacher-pupil and peer-to-peer social/behavioral adjustments. Thus AIMS makes it possible (a) to identify the behavioral demands that exist in less restrictive classroom settings, (b) to assess child behavior in relation to those demands, and (c) to determine the quality and adequacy of the child's behavioral adjustment to teachers and peers following social integration. Information produced by the AIMS system makes it possible to match children directly to classroom settings in the behavioral domain. The AIMS system identifies both adaptive and maladaptive behavioral competencies that are viewed by receiving teachers as essential and in which the child can be trained so as to enhance both "match" and adaptation. AIMS also

identifies both critically important behavioral skills and competences that facilitate adjustment and unacceptable maladaptive behaviors that disrupt it. Precise identification of these behavioral responses via the AIMS assessment system makes it possible to greatly improve both "match" and adaptation.

Instruments

The AIMS system consists of four instruments: (1) the SBS (Social Behavior Survival) Inventory of Teacher Social Behavior Standards and Expectations, (2) the SBS Child Behavior Rating Scale, (3) the Classroom Adjustment Code (CAC), and (4) the Social Interaction Code (SIC) (see Walker in press). The first two instruments rely on teacher ratings that involve, respectively, (a) social validation (Kazdin 1977) ratings of adaptive and maladaptive descriptions of child behavior and (b) criterion-referenced ratings of child behavior status on the SBS Inventory items receiving high social validation ratings by receiving teachers. The SBS Inventory uses teacher ratings of "adaptive" and "maladaptive" descriptors of child behavior as a primary rating referent to generate information on the expected forms of regularly occurring behavior in the target classroom setting (Wicker 1972). Teachers rate adaptive descriptors (such as achieving a satisfactory classroom adjustment) along a dimension of importance and maladaptive descriptors (such as refusing to obey classroom rules) along a dimension of acceptability. A copy of this instrument is included as appendix A.

The SBS Inventory yields a total score and five factor scores--three in section 1 of the scale and two in section 2 of the scale. For assessment and placement purposes, the major sources of information in the scale for assessment and placement purposes are the number and types of adaptive item descriptors rated as critically important to a successful adjustment and the number and type of maladaptive descriptors rated as unacceptable. The

Inventory also assesses the receiving teacher's technical assistance needs in managing and instructing the target child. This instrument provides a great deal of information about the nature of the classroom environment as defined by the teacher's behavioral expectations, standards, and social norms governing the behavior of children in the class. As such, it provides a useful index of classroom atmosphere and produces prescriptive information that makes it possible to maximize person-environment fit in the behavioral domain.

The second instrument of the AIMS process, the SBS Child Behavior Rating Scale, assesses the target child's behavioral status in relation to each item rated critical and unacceptable on the SBS inventory by using a criterion-referenced scaling format to determine (a) how deficient the pupil is in relation to each critical item and (b) how far the pupil is outside normal limits or acceptable social norms on each item rated unacceptable. Someone with a thorough knowledge of the target child's behavior pattern completes this scale after the receiving teacher has responded to the SBS Inventory. This scale makes it possible to assess child behavioral status on a one-to-one correspondence with teacher responses to the SBS Inventory. Thus child behavioral status is assessed on the same dimensions as are the teachers' expectations.

The third and fourth instruments, the CAC and SIC codes, provide estimates of respectively (a) the amount of the target pupil's academic engaged time and teacher behavior directed toward the target pupil and (b) the amount, quality, and topography of peer-to-peer social contact and peer responses directed to the target child's behavior. Research studies indicate that handicapped children and many nonhandicapped children experience significant adjustment problems and failure in these two domains (Gresham 1982; Hersh and Walker 1983). These codes provide direct measures of teacher

and peer adjustment status independent of teacher judgment.

Extensive normative data are available on all these instruments (Walker, in press; and Walker, Reavis, Rhode and Jenson, in press). The development and initial validation of the SBS Inventory are described in Hersh and Walker (1983) and Walker and Rankin (1983). Research and normative data for handicapped and nonhandicapped populations on the observation codes are reported in Walker, McConnell, and Clarke (in press). The use of the AIMS assessment system in the mainstreaming process is described in Walker (1984). Major findings to date on the SBS Inventory are reviewed below. These findings are derived from a program of research carried out over the past five years.

Outcomes

Findings and outcomes on the SBS Inventory are described below under three headings: descriptive outcomes, psychometric outcomes, and validation outcomes. The appropriate references are indicated to direct the reader to reports that provide detailed descriptions of the studies referred to and their findings.

Data on the instrument are currently available on over 3,000 teachers in the U.S., Canada, and Australia. A large number of studies have been conducted on the Inventory since it was first developed in 1980. It is not possible to provide detailed reviews of each of these studies herein.

Descriptive Outcomes. Research on a variety of teachers at different levels of training, with different grade levels of students, and in different settings (e.g. special versus regular) have consistently produced the following results.

--Table One presents means and standard deviations on the SBS Inventory across two initial validation samples of 50 regular teachers in the elementary grades and of 22 special education teachers teaching at the same age/grade level. Response category frequencies on the Inventory for the two groups indicated that (a) both groups of teachers checked over half the Section II items as unacceptable, (b) regular teachers checked approximately 23 percent of the Section I items as critical while special educators checked 16 percent as critical, and (c) both groups showed a similar pattern of scoring on the technical assistance portion (Section III) of the Inventory. These normative levels have substantial general applicability for both regular and special education teachers because they closely approximate teacher responses obtained in a subsequent, representative national sample.

--Scores on the inventory correlate moderately with categories of teachers' management and instructional behavior as assessed and recorded by direct observation procedures in the classroom (Walker and Rankin 1983). Higher scores on the Inventory (i.e., more items checked "critical" and "unacceptable") are associated with a behavioral profile of the effective teacher as represented in the teacher effectiveness literature. Teachers scoring high on the Inventory, for example, have higher rates of (a) monitoring pupil performance, (b) praising student behavior and performance, (c) producing instructional responses, (d) providing academic feedback, and (e) using indirect teaching/management techniques. Correspondingly, they have lower criticism rates and spend less time in managing transitions. High scoring teachers appeared to be more effective as both teachers and managers of the classroom environment. However, it should be noted that a teacher with high expectations for academic and behavioral performance would not necessarily be the best for mainstream placement of a handicapped pupil with moderate to severe deficiencies in social and academic competence. A

classroom in which there are high expectations for non-handicapped pupils may represent a non-supportive environment for a handicapped pupil.

--Teachers show tremendous variability in the level of their standards/expectations for child behavior. Some teachers rate all the items in section 1 (adaptive) as critical and all the items in section 2 (maladaptive) as unacceptable, while others rate only small numbers of items as critical and unacceptable (Hersh and Walker 1983; Walker and Rankin 1983). Table Two presents a characteristic profile of high, low, and average scoring teachers for the items in sections 1 and 2 of the Inventory. The extreme patterns of scoring represented by the high and low scoring teachers in Table Two appear to replicate in any sample of thirty or more teachers.

--The contents of the most highly rated adaptive items define the ideal student role and are directed almost exclusively toward meeting teacher convenience and compliance needs in the process of teaching. The highest rated maladaptive items describe high intensity but low frequency social behaviors such as stealing, teacher defiance, or physical aggression that conflict with teacher value systems and/or challenge the teacher's authority. Items in this response class are often referred to as teacher-owned problems while the lowest rated items in both sections 1 (adaptive) and 2 (maladaptive) described peer-related social skills and deficits which are regarded as student-owned problems (See Brophy and Evertson 1981). Teacher-owned problems generate emotional controlling and punishing teacher responses while student-owned problems generate only occasional mild expressions of concern from teachers.

--The ratings and behavioral profiles of regular and special education teachers on the SBS Inventory were highly similar in both level and content. Their social behavior standards and expectations appeared to be nearly identical (Walker and Rankin 1983; Walker, Reavis, Rhode and Jenson,

in press).

These findings suggest that teacher responses to the SBS Inventory identify those who differ radically in the level and intensity of their behavioral demands on students and that these differences are correlated with teacher behavior. It would appear that in the schooling process generally, and especially in the mainstreaming process, teacher differences in this domain ought to be taken into account in placement and social integration.

Psychometric Outcomes. The SBS Inventory appears to have very acceptable psychometric properties. Three separate estimates of coefficient alpha for sections 1 and 2 of the Inventory all exceeded the .90 level. Test/retest correlations over a six-week interval for total score (section 1 plus section 2) were .82 for regular teachers (n=50) and .86 for special education teachers (n=22). Stability coefficients for sections 1 and 2 were .78 and .74 for regular teachers and .81 and .80 for special educators.

An analysis of the stability of individual item ratings indicated that over 75 percent of the scale items were rated identically by teachers over a six-week period. This held true for both sections 1 and 2 and replicated for regular and special education teachers.

A study was conducted to determine whether labelling of Inventory sections 1 and 2 of the instrument as measuring respectively adaptive versus maladaptive classes of pupil behavior influenced teacher ratings. Two samples of regular teachers in rural areas of California and Wisconsin were recruited as participants in the study. Thirty-nine teachers participated and were divided equally into two groups using a random selection procedure. Teachers in group one responded to an SBS Inventory form in which the content of sections 1 and 2 was not labelled; teachers in group two responded to a form in which the content of the two sections was labelled. Results

indicated no significant differences in average teacher responses to sections 1 and 2 of the Inventory or in total score.

Validation Outcomes. Five types of validity have been estimated to date on the SBS Inventory: (a) item, (b) concurrent, (c) criterion, (d) contrasted groups, (e) factorial validity. Validation of the instrument is ongoing and a number of validity studies are in process. The results of completed validation studies will be summarized briefly below.

Item validity for three combined samples of teachers (n=196) was estimated using an internal criterion variable such as total score. Item-total correlations ranged from .32 to .70 for Section 1 and from .25 to .64 for Section 2. All of the items met the minimum cut off score for acceptable item validity of .25.

The SBS Inventory has demonstrated low to moderately high correlations with three concurrent measures of teacher attributes. These are the Minnesota Teacher Attitude Survey by Cook, Leeds, and Callis (1951); the Classroom Integration Inventory by Proctor (1967); and the Problems in Schools Questionnaire by Deci, Schwartz, Sheinman, and Ryan (1981). The strongest relationships were demonstrated with the Problems in Schools Questionnaire (i.e. correlations in the magnitude of .6 to .70); moderate correlations were obtained with the CII, and low or non-significant correlations were obtained with the MTAS.

Criterion validity is suggested by several studies that have demonstrated powerful relationships between Inventory scores and direct observations of teacher behavior and academic achievement. These studies converge in documenting the relationship of higher scores on the Inventory with the use of structured, direct instruction procedures and with higher achievement gain scores over time. However, these results are somewhat

tenuous given the relatively small numbers of cases involved in the studies and await replication using larger samples of teachers and classrooms.

Evidence for the contrasted groups validity of the Inventory is suggested by a study of teachers of hearing impaired children in three different settings representing increasing levels of restrictiveness and a study of teachers of emotionally disturbed children in residential versus day treatment centers. Results of these studies indicate that the less restrictive the setting, the higher and more demanding the teacher's behavioral standards and expectations, and vice versa. This is not an unexpected finding, but it demonstrates the instrument's sensitivity to differences in teacher expectations and behavioral standards that, logically, would exist.

The factorial validity of the SBS Inventory was estimated on a combined pool of teachers representing both elementary and secondary grade levels. Results of this analysis produced three factors for section 1 and two for section 2 (see Walker and Rankin 1983 for a description of this study). These factors correspond to the commonly observed dichotomy of teacher-owned versus student-owned problems. That is, behavioral competencies relating to compliance with teacher directives load on one factor and those relating to peer directed social behavior load on the second factor.

The validation studies conducted so far suggest that the SBS Inventory does have validity for the assessment of teacher expectations/behavioral standards and for the relationship of scale scores to concurrent measures and external criteria. The extent to which the instrument can be used as a reliable vehicle for the precise selection of placement settings that optimally match child characteristics remains to be demonstrated. The AIMS assessment system provides a vehicle for the

potential achievement of this goal and makes it possible (1) to identify the adaptive and maladaptive child behaviors of central concern to the classroom teacher, (2) to use this information prescriptively in the placement and integration processes, and (3) to assess the adequacy of pupil adjustment following integration.

AIMS is yet another example of an ecological assessment system that attempts to measure a relevant component of the environmental milieu in which children are expected to function effectively. It provides a direct measure of the behavioral demand levels that teachers apply to the class as a whole and that may mediate individual teacher-pupil interactions. Substantial research remains to be conducted on the system in order to firmly establish its validity for these purposes. Ultimately, instruments of this type may be incorporated into standard school practices and may strongly affect the social ecology of the schooling process. If so, it is hoped they will contribute to improved schooling effectiveness and more positive interactions between teachers and the full range of pupils who represent the heterogeneous behavioral mix found in most classroom settings.

SECTION FOUR
IMPLICATIONS FOR SCHOOL PRACTICES AND RESEARCH

Implications of assessment systems such as AIMS can be drawn for current school practices as well as for research strategies that would investigate more effective and precise methods of assigning children to teachers, and vice versa. Brief discussions of these issues follow.

Implications for School Practices

It seems obvious that setting-specific assessment systems such as AIMS have great potential value in the enhancement of person-environment fit--especially in the context of mainstreaming or of community placement of developmentally disabled individuals. Such systems provide a great deal of information regarding contextual variables, classroom atmosphere, and social norms. Their value is further enhanced if target children are assessed on the same dimension(s) as the environmental variables in question. This type of interactive assessment process makes it possible to truly match individuals to settings and to construct prescriptive training programs for preparing them more effectively to meet the minimal behavioral requirements that exist within settings.

There is currently a strong movement in the field of developmental disabilities toward a recommitment to enhancing person-environment in order to improve the adjustment and quality of life of handicapped individuals. A thorough knowledge of placement settings is perhaps the most powerful source of information affecting the future adjustment of deinstitutionalized individuals (Berkson 1981; Intagliata 1983) as attested to by systematic studies of successfully and unsuccessfully placed DD persons. Attempts are also being made in the Developmental Disabilities field to develop a taxonomy

of community placement settings and to describe carefully their salient features in relation to the characteristics of handicapped individuals entering them.

The special education field appears to be developing none of these initiatives, perhaps because the legal mandate of P.L. 94-142 suggests that educators are obligated to expose handicapped pupils to the least restrictive educational placement available. Unfortunately, the quality of regular and special classroom placement options varies tremendously in terms of providing supportive environments for mainstreamed handicapped pupils. Very few attempts are in evidence to develop either the assessment procedures or the taxonomies necessary for improving placements of handicapped individuals. Instead, teachers in less restrictive educational settings are expected to accommodate the unique needs of handicapped pupils as a matter of standard practice. The available evidence suggests this approach has not been productive (Hersh and Walker 1983; Glass 1983). In this author's view, significant progress will be unlikely in this area until there is (1) a clear recognition that the needs of handicapped individuals are not being well met within mainstream settings, (2) an attempt to select and structure classroom environments in the direction of greater supportiveness, and (3) a systematic effort to enhance person-environment fit.

In the area of regular education, it would appear that the methodology exists to more effectively match students to teachers on a broad scale. For example, children could be routinely rated on such dimensions as general teachability, the extent to which they manifest teacher-owned versus student-owned problems, or the extent to which they are perceived as high expectation students. In addition, some teachers are more effective with certain types of pupils than others. It is now possible to identify less effective and more effective teachers reliably and inexpensively, given the

correlates and attributes associated with effective teaching. With the advent of improved setting measures and the data management capabilities of microcomputers, it appears possible to assign pupils to classrooms in a way that can maximize the learning and adjustment of children and simultaneously take advantage of the particular strengths of individual teachers.

Implications for Research

A recurring theme in the teacher effectiveness literature is that effective teachers, classrooms, and schools are associated with high expectations for learning and behavior. Until recently, only very limited methods have been available to quantify teacher expectations, to provide a basis for comparing teachers on this variable, and to relate status on it to other performance measures. The AIMS assessment system and others like it make these activities possible.

This assessment system could be used to investigate the following variables and relationships: (1) the impact of teacher expectations on individual teacher-student interactions and on management of either small groups of students or entire classrooms, (2) the formation and expression of teachers' behavioral standards and expectations over time, (3) the role of teacher expectations in the selection and training of teachers, (4) the relationship between teacher expectations and the number and variety of opportunties provided students to respond academically, and (5) the extent to which placement processes can be made more efficient and precise for both handicapped and nonhandicapped pupils. These variables and relationships by no means exhaust the possibilities. However, they appear to be especially germane to the task of improving current school practices.

Historically, school-based assessment procedures have suffered from a lack of relevance and have often failed to provide prescriptive information

of value in educational decision-making. There now appears to be a strong movement toward the development of interactive environmental assessment systems that will address these deficits directly. The next decade should provide answers to the question of whether such interactive systems will result in greater efficacy in educational decision-making and programming.

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APPENDIX

THE SBS INVENTORY OF TEACHER SOCIAL BEHAVIOR

STANDARDS AND EXPECTATIONS

The SBS INVENTORY of Teacher Social Behavior Standards and Expectations

by

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Demographic Information

1. Teacher Name: _____

2. Sex: ( ) Male ( ) Female

3. Teaching Experience:

   Number of years total: _____

   Number of years in current position: _____

4. Current Teaching Level:

   ( ) Preschool ( ) Primary ( ) Intermediate
   ( ) Junior High ( ) High School ( ) Other

5. Type of Handicapped Children Worked With:

   ( ) None ( ) LD ( ) ED ( ) TMR ( ) EMR ( ) Deaf
   ( ) Blind ( ) Orthopedically Handicapped ( ) Multiply Handicapped
   ( ) Other (please specify) _____

6. Classroom Setting You Currently Teach In:

   ( ) Regular ( ) Resource ( ) Special
   ( ) Other (please specify) _____

Rater Instructions: This Inventory consists of two sets of items descriptive of child social behavior in the classroom setting. The first set of items (Section I) describes child social behavior competencies and skills that are considered appropriate to the classroom setting. The second set (Section II) describes child behavior that is considered maladaptive, inappropriate and/or disruptive to the classroom setting. As a classroom teacher, you are asked to make one of three rating judgments about each item in Sections I and II of the Inventory.

Instructions for Section I: For the items in this section, please indicate whether the behavior described is (a) Critical, (b) Desirable, or (c) Unimportant to a successful adjustment in your classroom by placing a check (✓) in the appropriate parentheses. The line to the left of each item will be used later.

Critical means that possession of the behavior is absolutely essential to a successful or satisfactory adjustment in your classroom.

Desirable means that possession of the behavior is not essential or critical to a satisfactory classroom adjustment, but is encouraged.

Unimportant means that you perceive the behavior as not being necessary or required for a satisfactory adjustment in your classroom.

Section I: Descriptions of ADAPTIVE, appropriate child behavior(s).

		Critical	Desirable	Unimportant
_____	1. Pupil is flexible and can adjust to different instructional situations, e.g., changes in routine, teachers, setting, etc.	( )	( )	( )
_____	2. Child listens while other children are speaking, e.g., as in circle or sharing time.	( )	( )	( )
_____	3. Child communicates adequately, e.g., speaks normally and can be understood.	( )	( )	( )
_____	4. Child takes his/her turn.	( )	( )	( )
_____	5. Child uses academic tools correctly, e.g., paper, pencils, scissors, etc.	( )	( )	( )
_____	6. Child seeks teacher attention at appropriate times.	( )	( )	( )
_____	7. Child models or imitates the appropriate behavior of other children.	( )	( )	( )
_____	8. Child uses free time appropriately.	( )	( )	( )
_____	9. Child makes his/her assistance needs known in an appropriate manner, e.g., asks to go to the bathroom, raises hand when finished with work, asks for help with work, lets teacher know when sick or hurt.	( )	( )	( )

		Critical	Desirable	Unimportant
_____	10. Child listens carefully to teacher instructions and directions for assignments.	( )	( )	( )
_____	11. Child volunteers for classroom activities, e.g., assisting the teacher, reading aloud, classroom games, etc.	( )	( )	( )
_____	12. Child complies with teacher commands.	( )	( )	( )
_____	13. Child improves academic or social behavior in response to teacher feedback.	( )	( )	( )
_____	14. Child is considerate of the feelings of others, e.g., says or does things indicating an awareness of another's feelings.	( )	( )	( )
_____	15. Child produces work of acceptable quality given her/his skill level.	( )	( )	( )
_____	16. Child cooperates with peers in group activities or situations.	( )	( )	( )
_____	17. Child follows established classroom rules.	( )	( )	( )
_____	18 Child can have normal conversations with peers without becoming hostile or angry.	( )	( )	( )
_____	19. Child can work on projects in class with another student.	( )	( )	( )
_____	20. Child compliments peers regarding some attribute or behavior.	( )	( )	( )
_____	21. Child has independent study skills, e.g., can work adequately with minimal teacher support; attempts to solve problem with schoolwork before asking for help.	( )	( )	( )
_____	22. Child speaks to others in a tone of voice appropriate to the situation.	( )	( )	( )

		Critical	Desirable	Unimportant
_____	23. Child answers or attempts to answer a question when called on by the teacher.	( )	( )	( )
_____	24. Child copes with failure in an appropriate manner, e.g., doesn't give up on assignment or project involved in.	( )	( )	( )
_____	25. Child behaves appropriately in non-classroom settings (bathroom, hallways, lunchroom, playground), e.g., walks quietly, follows playground rules, etc.	( )	( )	( )
_____	26. Child resolves peer conflicts or problems adequately on her/his own without requesting teacher assistance.	( )	( )	( )
_____	27. Child can accept not getting his/her own way.	( )	( )	( )
_____	28. Child attends consistently to assigned tasks.	( )	( )	( )
_____	29. Child ignores the distractions or interruptions of other students during academic activities.	( )	( )	( )
_____	30. Child knows when to ask permission of the teacher or other children.	( )	( )	( )
_____	31. Child tolerates usual school frustrations adequately, e.g., delays, schedule changes, etc.	( )	( )	( )
_____	32. Child can participate in and contribute to group instructional situations/activities.	( )	( )	( )
_____	33. Child can follow teacher written instructions and directions.	( )	( )	( )
_____	34. Child avoids breaking classroom rule(s) even when encouraged by a peer.	( )	( )	( )
_____	35. Child has good work habits, e.g., makes efficient use of class time, is organized, stays on task, etc.	( )	( )	( )

		Critical	Desirable	Unimportant
_____	36. Child is honest with others, e.g., tells the truth; isn't deceptive.	( )	( )	( )
_____	37. Child responds to requests and directions promptly.	( )	( )	( )
_____	38. Child questions rules, directions, or instructions that are not clear to her/him.	( )	( )	( )
_____	39. Child shares materials with others in a work situation.	( )	( )	( )
_____	40. Child makes productive use of time while waiting for teacher assistance, e.g., continues to work on problems that do not prove difficult.	( )	( )	( )
_____	41. Child raises hand before asking a question (where appropriate).	( )	( )	( )
_____	42. Child completes tasks within prescribed time limits.	( )	( )	( )
_____	43. Child uses social conventions appropriately, e.g., says "thank you," "please," apologizes, etc.	( )	( )	( )
_____	44. Child observes rules governing movement around the room, e.g., when and how to move.	( )	( )	( )
_____	45. Child responds to teasing or name calling by ignoring, changing the subject, or some other constructive means.	( )	( )	( )
_____	46. Child expresses anger appropriately, e.g., reacts to situation without becoming violent or destructive.	( )	( )	( )
_____	47. Child initiates conversation with peers in informal situations.	( )	( )	( )
_____	48. Child uses classroom equipment and materials properly.	( )	( )	( )

		Critical	Desirable	Unimportant
_____	49. Child uses playground equipment appropriately.	( )	( )	( )
_____	50. Child does seatwork assignments as directed.	( )	( )	( )
_____	51. Child sits up straight in seat during classroom instruction.	( )	( )	( )
_____	52. Child waits quietly for recognition before speaking out in class.	( )	( )	( )
_____	53. Child follows simple directions after hearing them once.	( )	( )	( )
_____	54. Child carries out decision(s) or plans formulated by the group.	( )	( )	( )
_____	55. Child can recognize and describe moods/feelings of others and self.	( )	( )	( )
_____	56. Child responds to conventional behavior management techniques.	( )	( )	( )

Instructions for Section II: For the items in this section, please indicate whether the behavior described is (a) Unacceptable, (b) Tolerated, or (c) Acceptable in your classroom.

Unacceptable means that you would not tolerate the behavior occurring in your classroom. Should an instance of the behavior occur, you would initiate active methods to (a) suppress or eliminate it and (b) prevent its future occurrence.

Tolerated means that while you will "put up" with the behavior in question (at least temporarily), you would prefer to see it reduced in frequency and/or replaced by an appropriate, incompatible behavior.

Acceptable means that the behavior presents no problems for you and you would not initiate procedures to decrease or eliminate it.

Section II: Descriptions of MALADAPTIVE, inappropriate child behavior(s)

		Unacceptable	Tolerated	Acceptable
_____	1. Child whines.	( )	( )	( )
_____	2. Child tests or challenges teacher imposed limits, e.g., classroom rules.	( )	( )	( )
_____	3. Child is easily distracted from the task or activity at hand.	( )	( )	( )
_____	4. Child has tantrums.	( )	( )	( )
_____	5. Child babbles to her/himself.	( )	( )	( )
_____	6. Child disturbs or disrupts the activities of others.	( )	( )	( )
_____	7. Child engages in stereotyped, repetitive behavior, e.g., repeats the same response over and over in the same way, such as pencil tapping, drumming fingers, or playing with objects.	( )	( )	( )
_____	8. Child refuses to share.	( )	( )	( )
_____	9. Child engages in silly, attention-getting behavior, e.g., makes unusual noises/gestures, imitates cartoon characters, etc.	( )	( )	( )
_____	10. Child lies.	( )	( )	( )
_____	11. Child is verbally aggressive with others, e.g., teases, taunts, engages in name-calling.	( )	( )	( )
_____	12. Child manipulates other children and/or situations in order to get his/her own way.	( )	( )	( )
_____	13. Child refuses to obey teacher-imposed classroom rules.	( )	( )	( )
_____	14. Child uses obscene language.	( )	( )	( )
_____	15. Child pouts or sulks.	( )	( )	( )

		Unacceptable	Tolerated	Acceptable
_____	16. Child ignores teacher warnings or reprimands.	( )	( )	( )
_____	17. Child is physically aggressive with others, e.g. hits, bites, chokes, holds.	( )	( )	( )
_____	18. Child cheats, e.g., copies work from others.	( )	( )	( )
_____	19. Child becomes visibly upset or angry when things do not go her/his way.	( )	( )	( )
_____	20. Child talks out of turn.	( )	( )	( )
_____	21. Child ignores the social initiations (overtures, advances, etc.) of other children.	( )	( )	( )
_____	22. Child damages others' property, e.g., academic materials, personal possessions, etc.	( )	( )	( )
_____	23. Child asks irrelevant questions, e.g., questions serve no functional purpose and are not task related.	( )	( )	( )
_____	24. Child reacts with defiance to instructions or commands.	( )	( )	( )
_____	25. Child steals.	( )	( )	( )
_____	26. Child does not follow specified rules of games and/or class activities.	( )	( )	( )
_____	27. Child obeys only when threatened with punishment.	( )	( )	( )
_____	28. Child refuses to play in games with other children.	( )	( )	( )
_____	29. Child behaves inappropriately in class when corrected, e.g., shouts back, defies the teacher, etc.	( )	( )	( )

		Unacceptable	Tolerated	Acceptable
_____ 30.	Child forces the submission of peers by being dominant, bossy, and/or overbearing.	( )	( )	( )
_____ 31.	Child starts activities, but does not finish them.	( )	( )	( )
_____ 32.	Child argues and must have the last word in verbal exchanges with peers and/or teacher.	( )	( )	( )
_____ 33.	Child appears to be unmotivated, e.g., not interested in school work.	( )	( )	( )
_____ 34.	Child makes lewd or obscene gestures.	( )	( )	( )
_____ 35.	Child displays high levels of dependence, e.g., needs excessive amounts of assistance, feedback, and/or supervision to complete simple tasks.	( )	( )	( )
_____ 36.	Child does not respond when called upon.	( )	( )	( )
_____ 37.	Child creates a disturbance during class activities, e.g., is excessively noisy, bothers other students, is out-of-seat, etc.	( )	( )	( )
_____ 38.	Child is overly affectionate with other children and/or adults, e.g., touching, hugging, kissing.	( )	( )	( )
_____ 39.	Child is excessively demanding, e.g., demands too much individual attention.	( )	( )	( )
_____ 40.	Child is inexcusably late for the beginning of class activities.	( )	( )	( )
_____ 41.	Child is seriously withdrawn, e.g., whenever possible, avoids social contact with other children and/or adults.	( )	( )	( )

		Unacceptable	Tolerated	Acceptable
_____	42. Child interrupts the teacher when the teacher is engaged in a presentation or activity.	( )	( )	( )
_____	43. Child engages in inappropriate sexual behavior, e.g., masturbates, exposes self, etc.	( )	( )	( )
_____	44. Child is self-abusive, e.g., biting, cutting, or bruising self; head-banging, etc.	( )	( )	( )
_____	45. Child wants to participate in playground activity in progress, but is afraid to ask to join.	( )	( )	( )
_____	46. Child does not share toys and equipment in a play situation.	( )	( )	( )
_____	47. Child does not follow and/or give into necessary rules of games and class activities.	( )	( )	( )
_____	48. Child does not correct mistakes when teacher indicates there are errors.	( )	( )	( )
_____	49. Child does not ask permission to use others' property.	( )	( )	( )
_____	50. Child's remarks or questions are irrelevant to classroom discussions.	( )	( )	( )
_____	51. Child reacts negatively to assigned school work, e.g., complains, sulks, refuses to start task.	( )	( )	( )

Section III: TECHNICAL ASSISTANCE NEEDS

Instructions: The purpose of this section of the SBS Inventory is to identify your technical assistance needs in teaching and managing handicapped children who, at some future point, could be integrated into your classroom. These children are likely to be deficient in some of the normal skills/competencies described in Section I, and outside the normal range on some of the maladaptive social behaviors described in Section II.

You are asked to make one of three rating judgments for each item in Section I that you rated as Critical and for each item in Section II that you rated as Unacceptable. In the line space to the left of the Section I (Critical) items, indicate whether:

(a) You would insist that the child have mastered the skill or competency prior to entry into your class, or

(b) Following entry, you would accept responsibility for developing the skill/competency, but you would expect technical assistance in the process of doing so, or

(c) Following entry, you would accept responsibility for developing the skill/competency and would not require technical assistance.

Similarly, for Section II (Unacceptable) items, indicate whether:

(a) The child must be within normal limits on the social behavior in question prior to entry into your class, or

(b) Following entry, you will take responsibility for moving the child to within normal limits on the social behavior, but only with technical assistance provided, or

(c) Following entry, you will take responsibility for moving the child to within normal limits on the social behavior, and would not require technical assistance.

PLEASE INDICATE YOUR ANSWER BY PLACING a, b, or c IN THE SPACE TO THE LEFT OF THE ITEM.

Table One

RATING CATEGORY FREQUENCIES OF REGULAR AND SPECIAL EDUCATION TEACHERS' RESPONSES TO INVENTORY AND CHECKLIST ITEMS ON TWO OCCASIONS

SBS INVENTORY

Section I (Adaptive Items) 56 in number:

	Regular Teachers				Special Education Teachers			
	1st Administration		2nd Administration		1st Administration		2nd Administration	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Critical	12.78	13.12	14.10	13.56	9.13	12.62	8.54	11.97
Desirable	39.70	12.30	39.78	13.04	40.63	12.14	42.63	11.54
Unimportant	3.50	5.80	2.06	4.20	6.22	8.60	4.81	6.38

Section II (Maladaptive Items) 51 in number:

Unacceptable	27.96	9.14	28.66	10.64	25.22	12.76	27.72	12.43
Tolerated	22.22	8.79	21.80	10.22	25.00	12.35	22.77	11.94
Acceptable	0.82	1.73	0.48	1.11	0.77	1.79	0.40	1.18

Section III. Technical Assistance Needs

Section I--Critical Rated Items

	Regular Teachers				Special Education Teachers			
	1st Administration		2nd Administration		1st Administration		2nd Administration	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
(a) Remediate prior to placement	2.36	6.57	2.66	6.99	1.45	3.20	1.00	2.77
(b) Technical assistance required after placement	3.00	3.41	3.16	4.33	2.54	5.20	1.68	3.54
(c) No technical assistance required	7.36	9.92	7.70	10.74	4.95	9.83	5.50	9.83

Section II--Unacceptable Rated Items

	Regular Teachers				Special Education Teachers			
	1st Administration		2nd Administration		1st Administration		2nd Administration	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{Y}$	S.D.	$\bar{X}$	S.D.
(a) Remediate prior to placement	6.10	6.91	8.93	10.81	2.86	4.94	4.52	6.86
(b) Technical assistance required after placement	11.20	6.48	10.79	6.62	8.95	6.91	7.90	8.20
(c) No technical assistance required	9.64	8.53	9.06	9.02	13.36	11.63	15.38	11.62

Table Two

Profiles of Teachers' Scores
on the SBS Inventory

Section I

	Critical	Desirable	Unimportant
Teacher 1	0	36	20
Teacher 2	47	9	0
Teacher 3	15	40	1

Section II

	Unacceptable	Tolerated	Acceptable
Teacher 4	51	0	0
Teacher 5	8	42	1
Teacher 6	28	22	1