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ABSTRACT

The Barclay Classroom Climate Inventory, an instrument designed to measure self-competency skills, peer evaluations, vocational awareness, and teacher judgments of elementary school children is outlined. A brief review of the literature is presented, with a discussion of the parts of the instrument and the methods whereby the scores derived from independent sources (self, peer group, and teachers) are converted into a unique narrative report about the child which interprets the data more effectively than human analysis. The instrument provides information concerning the behavioral and social skills of individuals in the classroom, and the group characteristics of the classroom which foster a learning environment. (Author/TA)

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MEASURING THE SOCIAL CLIMATE OF
THE CLASSROOM *

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One of the major problems facing the implementation of new strategies of learning and/or intervention in the schools is the fact that the process of school learning is a complex matrix composed of student, teacher, curriculum, parental, and other environmental inputs. Specifically, a central problem of the school psychologist, school counselor, or teacher is to determine how to allocate his own limited resources in such a way that he may function preventatively rather than be chiefly concerned with remediation and reconstructive techniques after long chains of disruptive or maladaptive behaviors have been established. There is thus a need for determination, at an early age, who is presenting learning problems in the school, and then determining concrete strategies of behavior change or implementing new approaches to learning which will accelerate the growth of positive motor, social, and cognitive skills, and will reduce those impediments to such growth. In short, there is a need to: (a) identify methods of screening children by a comprehensive, economical, effective, and non-offensive psychometric method; (b) implement power-potential techniques of curriculum and/or intervention which will accelerate individual growth; (c) allow for teacher involvement and decision-making; and (d) evaluate methods of curriculum or intervention used in relationship to change which takes place.

Specifically, however, a serious and chronic limitation for the classroom teacher, the guidance counselor, and others within the school setting who seek behavioral changes and improved rates for student learning is a lack of integrative information concerning (1) the behavioral and social skills of individual

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students in a classroom, and (2) the group characteristics of the classroom which foster a learning environment. That information which is available in an organized fashion usually includes no more than a few standardized measures of intelligence, aptitude, and achievement along with a collection of data relating to students' personal background and previous school achievement. Information regarding specific behavioral and social skills of individuals within the classroom may be collected by the teacher as he moves from crisis to crisis in the course of a school year, but seldom are these observations made or used in a systematic fashion. That information which is available in an organized fashion usually includes no more than a few standardized measures of intelligence, aptitude, and achievement along with a residue of data relating to the students' personal background and previous school achievement. Seldom, if ever, are the observations on classroom groups integrated sufficiently so as to provide clues to long-range teaching objectives or strategies for more efficient, effective learning within a particular classroom.

A second serious problem of the teacher in the classroom is that typically he lacks ability to choose from a broad range of teaching strategies (e.g. stimulus-response, cognitive-perceptual approaches, problem-solving and discovery learning) the particular approach which may fit best to the curriculum goals and personal characteristics of his students. In most instances the classroom teacher is too harried to be able to think through the consequences of social interaction in relation to task-oriented achievement. Ideally, the teacher needs precise information which will aid him in the complex decision-making procedures about the best kinds of teaching for a given group of children.

The major theses which underly the approach to the measurement of the elementary classroom climate herein described are: (1) that social interaction is the major source of slippage or uncontrolled variance between intellectual predictors and typical criteria of classroom achievement. This is to state that modes of social interaction between peers and teachers mediate the relationship

between aptitude for learning and the achieved consequences. It further states that the complexity of this interaction requires multiple input measurements, control and experimentation with alternate strategies of learning and social interaction, and the definition of multiple criteria of effective social and learning behavior. The second thesis is that the understanding of so many disparate measures is beyond the ability of most test experts. It is therefore necessary to reduce multiple measurements into a format which is ancillary to decision-making. For testing is simply one method of standardizing observations which can be used for decision-making. Therefore, a computer can serve as an integrating agent converting the simultaneous covariance of differential sets of measurements into language. The final thesis of this approach is that psychometric and behavioral observation, computer integration of these results can be used as a basis for decision-making by a learning team functioning in the school. By knowing the skills of individuals, how they perceive themselves, how others perceive them, and how their teachers evaluate them, it is possible to ascertain what kinds of specific learning objectives can be formulated for individuals and groups of individuals. The consequences of this utilization of accurate diagnostic base-line information are that interventions for individuals and groups can be related to new kinds of criteria based on individual progress, and that eventually probability type statements can be generated to suggest to learning teams and teachers which learning strategy may have the most success with which children.

1. A Brief Summary of Literature

In another paper (Barclay, 1970) the writer has detailed at length supporting literature for the notion that social interaction is a chief source of imprecision in teaching. Essentially, this research is drawn from a number of sources relating to expectation as a mediating variable in intentionality and behavior. Expectation is seen as the complex of visual,

auditory and motor cues which triggers both perceptual and behavioral processes. Explicitly or implicitly, the message from much recent research in the classroom climate appears to be centered on the importance of dyadic relationships between teachers and pupils. Bloom(1969) writes:" Each teacher begins a new term (or course) with the expectation that about a third of his students will adequately learn what he has to teach. He expects about a third of his students to fail or just 'get by'"(p.1). Through such expectations grounded in the school policy of grading, beliefs about poor home conditions, or low I.Q., the teacher enters into a series of relationships which more or less confirm his expectations. Brophy and Good (1970), for example, analyzed the processes by which teachers communicate differential performance expectations to students and found that teachers demand better performance from those children for whom they have higher expectations, and conversely accepted lower performance from those they had lower expectations for. Beez(1968) further documented this concept in a study in which biased psychological reports were distributed randomly to two sets of elementary teachers who were working with sixty Headstart children. He found that teachers who worked with children thought to be slightly retarded expected less, taught less, and evaluated the children accordingly.

Expectations involve judgments about what is and what should be. Judgments are formed by perceptions which in turn are the product of modes of social interaction having both physiological and perceptual correlates. For example, Patterson and Reid(1967) maintain that reciprocity and coercion are the two main facets of social systems and document this by extensive case studies. This is consistent with the behavior modification and social learning studies reported by Bandura (1969), Krasner and Ullman(1965) and many others. This mass of comparatively new literature - and McReynolds(1969) has listed a bibliography of over 465 recent references - provides experimental justification of the earlier studies regarding environmental press reported by Holland(1966) and Astin(1965) in which psychometric differences found between the thrusts of various collegiate curricula.

But the student in the class must not only meet the expectations of his teacher and his parents, but cope with the multiple expectations of his peers. In this area of peer research it has been established relatively well that sociometric choices are not dependent on achievement (Lorber, 1969) and that levels of skill acquisition and patterns of reinforcement result in the acquisition of social status (Soares, 1969, Shulman, 1969, Barclay, 1970).

Moreover, the nature of expectation means in effect that it is an explicit or implicit criterion of meaningful behavior in the classroom. Each child in a classroom finds almost immediately that he must cope with two major external criterion sources which judge and shape his own behavior as effective or ineffective. One of these criterion sources is the peer group, the other is the teacher. The criteria themselves are expressed in a continual flow of exemplary models, imitation, selective reinforcement, punishment and value judgments. Judgments are made continually by students and teachers. They are made in accordance with the ethos of sub-cultures within the larger culture. "Where do you live? - What does your father do? Do you have brothers and sisters?" In addition, subtle distinctions in dress, possession of toys and money, kinds of bicycles etc., all communicate relevant information about affluence or lack of affluence, congruence to particular social values or divergence. What constitutes power in the peer group differs from class to class, from community to community, but the values and behaviors of social dimensions are tied very closely to those of achievement learning either in support or lack of support. All of these factors then shape the subjective and personal feelings of the child and are important determinants to his behavior.

2. An Experimental Attempt to Measure Classroom Climate

Over the past seven years the writer has attempted to construct an instrument which will evaluate personal skills, social relationships and tap teacher judgments at the same time. The Barclay Classroom Climate Inventory was constructed on the

basis of much earlier research done by the writer using both teacher ratings and sociometric choices and extending cumulatively over a period of 14 years (Barclay, 1966a, 1966b, 1966c, 1966d, 1967a, 1967b). Though these studies reported that sociometric judgments and teacher ratings were predictive of school dropouts over a five-year period, were related to differential interest patterns, the status of the father in the community, and had some relationship to the age and sex of the teacher, it was apparent from these earlier studies that the sociometric index as such was a global measure similar to the Stanford-Binet I.Q., i.e. something which covaries globally with many other personality variables. Stimulated by the research of Holland (1966) and Astin (1965), many interviews with children, asking them why they liked one child for one kind of activity as against another were completed. This pointed out that sociometric choices had to be situational in nature to accurately capture the complexity of relationships. Thus, for example, it was found that children like one child to study with, another to play ball with etc. Through experimentation with various kinds of teacher ratings, it was found that an adjective check-list appeared to be the least susceptible to a "halo effect". In addition, a group of vocational-oriented items were selected which indicate the exposure to the environment which a child has had.

These basic components of the instrumentation refer to self-judged competencies in terms of skills, group judgment of these same skills, and teacher judgment of the personal-social adjustment of the child and his effort and motivation. In all of the test construction Cronbach and Gleser's views on the use of short scales as a screening device were kept in mind (1965). Though, obviously, something is sacrificed in terms of reliability, the standard error of measurement, etc., by short scales, it is also a fact of school testing that children and teachers do not want to spend hours and hours completing lengthy tests. Since the instrument was designed to test third graders ease of administration, scoring, etc., had to be considered also. Further, the testing had to be relevant to fourth, fifth, and sixth graders also.

The BCCI taps four different sources of information about the individual in the classroom learning environment. These are: (1) the individual's own self-estimate of his personal and social skills, (2) peer judgments of these same skills, (3) individual acquaintance with the world of work and the environment, and (4) teacher judgments of student characteristics. The BCCI can be administered to third through sixth graders and takes about forty-five minutes of classroom time. When the teacher ratings are completed the answer sheets are machine scored and key punched for computer utilization. The computer program scores the data, provides raw scores together with a written narrative report providing impressions of the child as seen by himself, by the group, and by his teacher. At this point 127 elementary classrooms in Pennsylvania, Ohio, Kentucky, Illinois, California, Washington, Colorado and Texas have been tested including approximately 4000 children in the third through sixth grades.

The various items of the self scales are based on skill competencies grouped through internal consistency into four basic categories, i.e., artistic-intellectual (I can write poetry or I can play a musical instrument), realistic-masculine (I know how to make models, or I know how to use tools), social-conventional (I like to listen to others, or I hand my work in on time), enterprising, (I know how to save money, or I am chosen first in a game). Group choices are then made regarding the individuals who can best do these same type of skills. In addition, for the group scales there are items relating to reticent and disruptive behavior. The vocational awareness scales are grouped in the same categories and ask about interests in various kinds of occupations. The final section of the instrument is a list of 62 adjectives descriptive of personal and social adjustment as well as effort and motivation. The teacher checks only those adjectives which typically apply to the child's behavior. These adjectives were found to distribute themselves in a manner similar to Eysenck and Rachman's (1965) melancholic, phlegmatic, sanguine and choleric clusters, i.e., combinations of extroversion-introversion, stable and unstable traits.

In all, the Barclay Classroom Climate Inventory yields twenty-three independent scales and nine total (summary) or non-independent scales.

A considerable amount of research has been done with the BCCI which is reported in a Manual for the Barclay Classroom Climate Inventory (Barclay 1970b). Reliability studies indicate that the scales, though short in length, are stable and relatively reliable. Validation studies include cross-validation with similar instruments, and criterion centered studies in which the BCCI was compared with independent judgments of teachers. A study of the reporting system in which parents reviewed calculated and randomized responses from the report indicated that parents could pick out statements which were calculated on the basis of the testing and identify these statements as most characteristics of their children.

In addition, three experimental studies have been completed with the BCCI or an earlier version thereof. Forsyth and Jackson (1966) tested three groups of fifth graders in the Alameda City Schools of California and proceeded to work intensively with children identified as isolates in one of the classes using modeling, selective reinforcement, and group procedures designed to enhance the status of the isolates. A number of significant changes occurred in the post-testing for the experimental group. They also learned that changing a teacher in one of the other classes altered scores on the BCCI considerably. Brown (1966) working also with fifth graders utilized three treatments for three classes in Concord California. One class was re-structured in seating and group activities according to patterns of group choices. Another class received intensive group counseling, and the final class was involved in a placebo treatment which consisted of discussion of vocations. Though isolate children were involved in each of the three treatments, the placebo treatment caused the most change in both individual and group scores. Finally, the instrument was used in its present state with a target group of elementary children in the Alameda County School (California) Pace Project for identifying and working with Reticent Children (Barclay, 1968). Teachers who participated in studies with the BCCI in this project confirmed that the instrument identified reticent well as disruptive children and provided helpful information

The particular and novel aspect of the BCCI is that it converts a number of scores derived from independent sources (self, peer group, and teachers) into a written report which interprets the data as no human analysis could possibly do effectively. The judgments reflect many separate studies but are specifically related to factor analytic studies and step-wise regressions. Thus, for example, in the following summary statement there are varying degrees expressed in the language of the statement:

This boy's behavior based on self, peer and teacher judgments (1) appears, (2) tends, (3) strongly inclines to be viewed as consistent, stable and controlled and manifests a (1) fair, (2) high, (3) very high degree of concrete, motor, physical and conventional thinking skills.

In order for the first level of this statement(1) to be present in the computer report six separate psychometric conditions relating to self, peer and teacher judgments must be met. The second level requires that two additional conditions be met for a total of eight, and the strongest statement is not reported unless three more conditions are met for a total of eleven independent conditions. This procedure tends to ensure that false negatives and positives which are often found in the use of a single predictor against a single criterion will be avoided. The summary statements reflect the integrated judgments of the children themselves, their peer group and the teacher.

In addition to the individual reports which are written, group reports for boys and girls separately are also created. These group reports are based on separate norms for each of the thirty-four variables of the test computed on the basis of the classroom mean considered as a unit on an interval scale. Thus the report for the boys and for the girls reflects the specific assets and deficiencies noted by comparison with 73 other classroom units.

Research is continuing with the use of the BCCI as a decision-making aid for learning teams functioning in the elementary school. Experimental work with the Fayette County Schools (Lexington, Kentucky) and the Corpus Christi Public Schools in Texas has

been implemented. This involves the training of a group of learning consultants including principals, teachers, curriculum and school psychology staff to integrate the social interaction data from the BCCI with behavioral observations and intelligence-achievement data in an effort to provide for individualized instruction or counseling interventions. The function of this learning team is to provide curricular or counseling interventions related to specific individual or group needs. The data from the BCCI is easily understood, and provides an integrated base for understanding individual children and groups of children in a manner thus far not known. Teachers and principals are enthusiastic regarding the utilization of the instrument. Parents who participated in the preliminary validation of the reporting system were also enthusiastic regarding the kinds of information made available to them in the report.

Thus far the greatest concentration of effort has been placed on the development of a reliable and valid measure of the classroom social interaction. The present research and that contemplated for the future is closely identified with the development of learning consultation teams in the local school and the utilization of alternate learning strategies.

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