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ABSTRACT

It is the thesis of this discussion that outcome-based instructional systems (such as mastery learning, individually guided education, and competency-based education) represent a workable alternative to traditional approaches to instruction and are particularly suited to children in Head Start and Follow Through programs. This thesis is expanded mainly through a brief description of the elements of mastery learning and through discussions of organizational dimensions and the operational character of outcome-based practice. After describing the development of a researcher/practitioner coalition addressing implementation obstacles, discussion of organizational dimensions focuses on major obstacles to implementing mastery learning and philosophical premises underlying outcome-based practice. Specifically explored are staff attitudes and beliefs, role responsibilities and techniques, and organizational structure and procedure. Operational character is discussed in terms of learning outcome goals, criterion-referenced assessment and reporting, curriculum, instructional process, information management, success-oriented record keeping, and program evaluation. In general, the examination concerns philosophical premises, optimal instructional conditions, and operational components of outcome-based practice and suggests how these factors are related to apparent attitudinal, role performance, and structural obstacles to implementation. Concluding remarks concern how such factors are related to obstacles posed by the system of power and incentives governing school operations. Implications for Project Follow Through are pointed out. (RH)

OUTCOME-BASED INSTRUCTIONAL MANAGEMENT:

A SOCIOLOGICAL PERSPECTIVE

by

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OUTCOME-BASED INSTRUCTIONAL MANAGEMENT: A SOCIOLOGICAL PERSPECTIVE

During the past decade, there has emerged a discernible movement among public schools in the United States to establish instructional systems which hold exceptional promise for assisting virtually all students in reaching socially endorsed learning goals. These approaches, known by names such as Mastery Learning, Individually Guided Education, and Competency Based Education, share an orientation in which "learning outcomes," rather than time and routinized scheduling, constitute the basic operating principle of instructional delivery and student progress. These systems all employ methods and procedures that can be characterized by the term Outcome-Based.

It is the thesis of this paper that Outcome-Based (OB) systems represent a workable alternative to prevalent, often ineffective instructional approaches and, because of their demonstrated capacity to improve the learning of students from all socio-economic and racial groups, are particularly suited to the children served by Head Start and Follow Through programs. OB models are predicated on the premise that illiteracy and failure are neither inevitable nor acceptable consequences of schooling for anyone. When guided by OB principles, schools are expected to become "success based" rather than "selection oriented."

THE FOUNDATIONS OF OUTCOME-BASED PRACTICE

Mastery Learning Theory

The conception of OB practice advanced here has its roots both in the psychological learning theories of Carroll (1963), Bloom (1968, 1971, 1976 and 1980) and Block (1971) and in the more sociologically grounded work of Spady (1974, 1977, 1979 and 1981), Spady and Mitchell (1977 and 1980) and Mitchell and Spady (1978). Carroll in particular articulated one of the critical distinctions related to student learning when he developed and tested some basic propositions which separated the capacity to learn from the speed of learning.

Very simply, Carroll's seminal analysis of the relationship between time and learning opened up the possibility that low student achievement could be attributed to inadequate time/opportunity for learning rather than to an inherent inability to learn per se. Because rates of learning vary among students, the imposition of fixed and limited constraints on the time allowed for learning in typical instructional settings inevitably leads, he argued, to variability in the learning acquired. However, by varying time and opportunity, it is possible for virtually all students to "learn" (i.e., "master") given things.

In seizing on this fundamental proposition, Bloom began to examine both the relationship between time and learning and other conditions imbedded in the instructional process which affect learning success. His work over the past thirteen years has been devoted to explicating, testing, and refining the instructional conditions which minimize failure and maximize success for most students. The integration and application of the variables he has identified is known widely as Mastery Learning (ML).

While time and opportunity remain central components of Bloom's ML approach, his most fundamental philosophical positions challenge the prevalent application of models of instruction which translate (and even exacerbate) "individual differences" in student capacities directly into variability in learning outcomes. Through ML, Bloom seeks to minimize differences in student learning by altering the instructional conditions that promote and reinforce the school's traditional roles as a differentiator of student accomplishment and a selection agent for the society. These conditions are designed to address and redress the negative syndrome of learning failure experienced by many students by improving both the cognitive and affective components of instruction.

Mastery Learning Elements

Block (1979) singles out five elements in particular which contribute to the power of ML instruction: diagnosis, prescription, orientation, feedback and correction. Diagnosis refers to determining which cognitive or physical prerequisites students possess prior to their engaging in a given learning activity. While this seems like an obvious component of good teaching, ML implementers are often appalled at how much "learning" time is wasted by students who either cannot comprehend or already know the tasks they have been assigned to accomplish. Diagnosis determines task assignment in an ML or OB model.

Prescription, according to Block, is "the provision of appropriate learning tasks for each student based on the teacher's diagnosis." It clearly implies that a specific learning objective has been identified and that the materials with which each student engages have the capacity

to stimulate a change in his/her behavior that is congruent with the objective. It also implies that different students may be working toward different objectives and/or with different materials suited to their learning styles at any given point in time.

Orientation, in Block's terms, is "the clarification of each learning task for each student in terms of what is to be learned and how it is to be learned." This, according to many ML and OB implementers, means making the learning objective clear to students before they begin to address it and describing what successful performance would look like when the objective has been reached (i.e., "mastered"). Orientation should give meaning to and take the surprises out of the learning experience.

Feedback, in the context of Block's analysis of ML, is "the provision of constant information to each student regarding learning progress." This component requires that assessment and monitoring of student learning be continuous and tied directly to the successful accomplishment of the learning objective being addressed. In order for assessment to facilitate learning, it must convey information back to the student regarding the substantive elements of performance on the objective being pursued, not merely a value judgment (i.e., "not very good"), label (i.e., "B+"), or numerical score (i.e., "75") about the performance. In other words, feedback in an ML or OB model is referenced against "the criterion" of behavior described by the objective, and assessment is built on the specific "indicators" of that behavior - whether paper and pencil test items or an applied performance of some kind.

Correction, according to Block, is "the provision of timely supplementary instruction for each student whose learning progress is

insufficient." This, without question, has been one of the most central components of ML instruction from its conception. Bloom recognized early on that extending learning time and opportunity would be fruitful to some students only if they were shown their mistakes and were given additional instruction targeted specifically to correct them. That additional instruction was not to be a mere repetition of the initial assignment but an alternative approach to the objective being addressed.

Although the full character of the ML approach is not adequately captured in this brief description, the integration of these five components does begin to suggest some important implications about curriculum design, the teacher's instructional focus, the management of time and students, and expectations for student achievement and success which depart from many conventional practices. The potential extension of these differences becomes even more apparent when the focus of attention is moved away from the immediate classroom instructional process to the management of the schooling process as a whole.

ORGANIZATIONAL DIMENSIONS OF OUTCOME-BASED PRACTICE

A Researcher-Practitioner Coalition

Sociologists such as Spady and Mitchell and school administrators throughout North America seeking to introduce well conceived, comprehensive and thoroughly implemented ML programs have both recognized the formidable institutional obstacles which stand in the way of such extensive changes. An informal and spontaneous effort to address these implementation obstacles began in October, 1979, when a small group of researchers and public school educators interested in ML and "competency based" programs met to discuss the opportunities and roadblocks inherent

in these concepts. A number of these individuals were superintendents or program directors in school districts that had devoted years to building the necessary support base and developing the technical capacity to deliver authentic ML instruction. They were aware of both the struggles entailed in implementing ML and the impressive learning gains that their students were beginning to show on standardized achievement tests as a result of their efforts.

(For example, ML strategies have been gradually implemented over the past eight years in the elementary schools of Johnson City, a small, blue-collar town in south central New York state. In the early 70's, Johnson City's instructional program and achievement results were undistinguished. Today their students produce achievement profiles on the California Achievement Tests in reading, mathematics and language arts that are consistently above national grade-level norms. In fact, the higher the grade level, the greater is their achievement advantage. For example, their spring 1980 grade-level averages for second, fourth, sixth, and eighth graders respectively were 3.1, 5.7, 8.1, and 10.8 in reading; 3.2, 6.0, 9.5, and 10.1 in language arts; and 3.3, 5.7, 8.6, and 12.5 in mathematics. These findings suggest that the longer students are in Johnson City's ML program, the greater is their achievement advantage over students nationally in the same school grade. The predominantly black communities of Red Bank, New Jersey and University City, Missouri also show very positive, but somewhat less spectacular results.)

Two major concerns were expressed at this first meeting. First, there existed little philosophical and operational clarity surrounding the many existing "versions" of ML and competency based practice. The

terms "mastery learning" and "competency based education" had beco e so diluted and popularized that their true meaning was becoming lost in the mass attempt of districts to appear "with it." Both well implemented programs and the concepts themselves were in danger of being criticized or abandoned because the terms were being associated with poorly conceived and implemented programs.

Second, even the most highly developed programs still encountered major obstacles to their full development and implementation. ML strategies are used primarily in reading and mathematics in elementary and middle schools. Many areas of the curriculum remain untouched by these approaches, and their use in junior and senior high schools in any curricular area is rare.

At its second meeting in February, 1980, an agenda for addressing these issues began to emerge. The nearly fifty participants represented large urban districts such as Chicago, Cleveland, Dallas, Denver, New Orleans, and New York and smaller districts such as Johnson City, NY; Lorain, OH; Red Bank, NJ; and Waxahachie, TX. The group named itself the Network for Outcome-Based Schools (NO-BS), selected a planning committee, and proposed an agenda of work that would benefit member districts in conducting OB staff development and implementation activities.

The emergence of the name and a common agenda of activities occurred when most of the ML specialists in the group became convinced of three major things: 1) that ML and CBE shared many of the same philosophical and operational characteristics (Spady, 1978), 2) that CBE was not to be confused with the Minimum Competency Testing Movement (Spady, 1978 and 1979), and 3) that at least four different kinds of obstacles stood in the way of comprehensive ML implementation, only two of which were

being addressed at all in most programs (Spady and Mitchell, 1980). The two not being addressed were organizational in character and lay beyond the bounds of typical staff development strategies focused exclusively on changing teacher attitudes and skills.

Major Obstacles and Premises

The four major obstacles cited by Spady and Mitchell are: 1) the attitudes and beliefs of staff regarding themselves and their students' performance; 2) the new techniques and redefinition of roles and responsibilities required of staff; 3) existing organizational structures and procedures; and 4) the system of power and incentives governing the conditions of staff service, performance, and influence. They hold that failure to address and deal successfully with any one of these carries with it the risk of undermining either the spirit or operational character of OB practice.

The importance of dealing with the first two of these factors is discussed at length by Bloom (1971, 1976 and 1980), Block (1974, 1976, and 1979) and Block and Anderson (1975), and is strongly reinforced in the "Philosophical Premises Underlying Outcome-Based Practice" first developed by the Network for Outcome-Based Schools (NO-BS) in May, 1980 and revised in October, 1980 and January, 1981. The premises, or guiding hypotheses, also include elements which imply that the latter two factors be addressed as well, and are stated below:

"Philosophical Premises Underlying Outcome-Based Practice"

1. Almost all students are capable of achieving excellence in learning the essentials of formal schooling.

2. Success influences self-concept; self-concept influences learning and behavior.
3. The instructional process can be changed to improve learning.
4. Schools can maximize the learning conditions for all students by:
   a. establishing a school climate which continually affirms the worth and diversity of all students;
   b. specifying expected learning outcomes;
   c. expecting that all students perform at high levels of learning;
   d. ensuring that all students experience opportunities for personal success;
   e. varying the time for learning according to the needs of each student and the complexity of the task;
   f. having staff and students both take responsibility for successful learning outcomes;
   g. determining instructional assignment directly through continuous assessment of student learning; and
   h. certifying educational progress whenever demonstrated mastery is assessed and validated.

When taken as a whole, these premises and conditions embody an approach to schooling that is both achievement oriented and humanistic (see Block, 1979). For example, clear expectations regarding the school's recognition of the inherent value and capabilities of students are expressed in Premises 1 and 2 and Conditions a and c. The requirements for a "learner-responsive and adaptable" instructional system are stated in Premises 3 and 4 and Conditions d, e, f, g, and h. In addition, definite expectations for attainable student accomplishment also exist and are imbedded in Premises 1 and 2 and in Conditions b, c, f, and h.

Staff Attitudes and Beliefs

Upon reflection, the four Spady and Mitchell implementation obstacles noted earlier are also imbedded in this framework. First, the question of staff expectations regarding the importance of each student and the desirability and feasibility of creating successful learning experiences for them is addressed in Premises 1, 2 and 4 and in Conditions a, c, d and f. ML implementers frequently report that decades of societal beliefs, institutional inertia, professional training, and personal practice stand in the way of staff accepting the validity of and developing a commitment to Premise 1. Beliefs in the inherent selection function of schooling, the learning limitations of less able students (particularly from racial minorities or lower socio-economic backgrounds), and the adequacy of traditional teacher centered instructional delivery methods are difficult to change and, both deliberately and inadvertently, contribute to far lower learning results than are possible.

In addition, these same beliefs affect the establishment of the specific conditions which give this premise validity and which also influence the acceptance of Premises 2 and 3. They pertain to attitudes toward students from different racial and social backgrounds, toward their potential learning capacity, toward the definition and availability of and responsibility for student learning success, toward the value of changing instructional practices, and toward their professional identity and practices.

Without positive orientation toward these premises and conditions, their operational realization is virtually impossible.

Role Responsibilities and Techniques

Second, OB implementation requires the development of technical and procedural skills that make possible both the sequence of five concrete ML processes identified earlier by Block (i.e., diagnosis, prescription, orientation, feedback, and correction) and the realization of learning conditions b, d, e, g, and h. The critical things to note here are that not only must teachers develop the capability to effectively integrate Block's five essential processes into their everyday teaching repertory, they must also acquire the capacity to effectively implement procedures which imply the participation of staff outside a given classroom. For example, the specification of learning outcomes (a), creating conditions which allow all students to experience success (d), varying the time required for student mastery (e), determining instructional (i.e., both task and grade-level) assignments (g), and documenting and recording time-flexible student achievement (h), may require a degree of school-wide instructional management, coordination, and mutual assistance among staff that is neither present nor sought in traditional school settings. This implies that both a redefinition of teacher and administrator roles and the acquisition of the orientations and skills required by the people in those roles must be addressed by OB implementers.

Organizational Structure and Procedure

Third, following this same line of reasoning, Spady and Mitchell (1980) argue that OB practice may be impeded by the very organizational structuring which makes Conditions a, b, e, g, and h difficult to implement. That is, establishing a positive climate for learning, setting clear objectives (and standards) for student learning, varying the time available for learning, determining student instructional placement,

and certifying (improved) learning performance are all things over which individual teachers have some influence in their own classrooms, but they are also elements over which organizational procedures and official policies have a great deal of influence. This can be understood by examining the basic elements around which ML theory was originally developed and pursuing their organizational as well as classroom manifestations.

For example, the variables of time and outcomes explored by Carroll and Bloom as elements of a primarily psychological learning model are also profoundly organizational when viewed from a sociological perspective. This shift of perspective requires us to recognize that the preoccupation of the ML learning theorists has been on the flexible use of micro units of time: minutes, class periods, hours, or weeks; yet schooling as an organizational phenomenon is fundamentally defined and structured around macro units of time such as quarters, semesters and years in which virtually no flexibility inheres. Simply stated, ML is an instructional approach requiring time flexibility constrained by a formal organization whose operations are legally defined and structured around predetermined, inflexible units of time.

Similarly, the focal points of ML instruction are clearly defined, content- or criterion-referenced learning objectives that are finite in scope and generally ordered in a cumulative and skill-reinforcing sequence. From a narrow classroom/instructional perspective, ML requires that time be adjusted to the task-assignment requirements of this curriculum.

From an organizational perspective, however, the curriculum is broadly defined in terms of content but narrowly constrained by "time-

determined" program-assignment "realities." That is, there are "third grade" books which "third grade" students are supposed to "cover" while they are in "third grade" which lasts exactly from the beginning of September to the middle of June. Because students' time-determined program assignments are called third grade, they typically encounter a set of task assignments (i.e., third grade curriculum experiences) which are unique to and constrained by the time block itself. A decision is made in June regarding each student's future program assignment status. Those "promoted" go to fourth grade; those who fail are "retained" in the third grade, usually for another full nine month period of the same task assignments they had before. Thus, in the nearly universal model of school operations, fixed time and program assignment categories determine the task assignment experiences of students, rather than the reverse.

Once this tension between the task assignment structure of the classroom and the program assignment structure of the school is recognized, then the tension within the school over standards also becomes clearer. In the context of particular ML instructional units or learning objectives, for example, a criterion "standard" for mastery is set and diagnosis, prescription, orientation, feedback, and correction are all focused on helping the student reach the standard so that a subsequent task assignment can be pursued. The term continuous progress describes this typical OB instructional delivery/management approach in which students move from task assignment to task assignment in a timely (i.e., time flexible) fashion in each separate content area. It is clear what the student must be able to do in order to progress through a sequence of tasks in any "subject." Mastering each task assignment is the key to subsequent instructional progress.

At year's end, however, the focus abruptly shifts to an altogether different meaning and use of the term standard, particularly in non-OB schools. The focus becomes "how much" rather than "how well." Existing variations in the student's achievement across subjects are evened out by teachers. Students are compared with each other, matched against vague as well as concrete "norms" and cutting points, given comparative marks of one kind or another, and either promoted or retained. Continuous progress, if it ever existed, is replaced by "discontinuous promotion." In fact, in almost all schools, promotion to a new grade (and curriculum) is not based on mastery of a specific criterion but on a generalized and vague profile of achievement, social development, and deportment. If it were, students would be entering and leaving grade levels continually throughout the school year, subject by subject, rather than en masse in all subjects in June.

The proposition which guides the remainder of this analysis, then, is that the conditions of opportunity which guide instructional delivery and learning for students are fundamentally shaped and constrained by the organizational requirements of the evaluation/certification/promotion system of the school. The ground rules for when and how students get evaluated and promoted also set the conditions for instruction and learning. OB instructional approaches such as Mastery Learning will never realize their full potential as long as the biases and constraints of typical selection-oriented student evaluation, grading, record keeping and promotion systems persist.

When viewed in this light, it is apparent that the basic "conditions of opportunity" in the instructional system of the school are a direct

consequence of the structures which determine the ultimate certification (i.e., promotion and graduation eligibility) of students. To alter instructional technology by introducing ML techniques and expectations into schools without addressing the value and structural premises underlying their certification systems is like trying to force a large round peg into a much smaller square hole.

When examined in the light of the specified criteria of performance which characterize OB instructional goals and standards, the traditional system of teacher-based grades and promotion standards seems far more ambiguous. As noted by Spady and Mitchell (1980) it is inherently subjective, inconsistent, comparative, private, and potentially particularistic. In short, it is vague referenced (Spady, 1978) and virtually guarantees variability in student learning at the end of predetermined time periods - the very problem that Carroll and Bloom sought to redress.

As suggested in Figure 1 (following page), however, the juxtaposition of the time and learning outcome conditions suggested by Carroll helps to identify four different philosophies/models of education, each with its own unique orientation toward the definition of standards and use of goals on the one hand and structuring of time and performance roles on the other.

Note in the top row of the table that traditional school practice and typical humanistic developmental approaches to education share in common the implicit pursuit of learning goals by staff and students and the private determination by individual teachers of the standards to be applied to those implicit goals. Where they differ is in their orientation toward the regularity of time used to govern instructional delivery (i.e., how long, how often, and when) and in the degree of routinization (i.e., definition of role and position, prescription of duties, and location of service) built into the role.

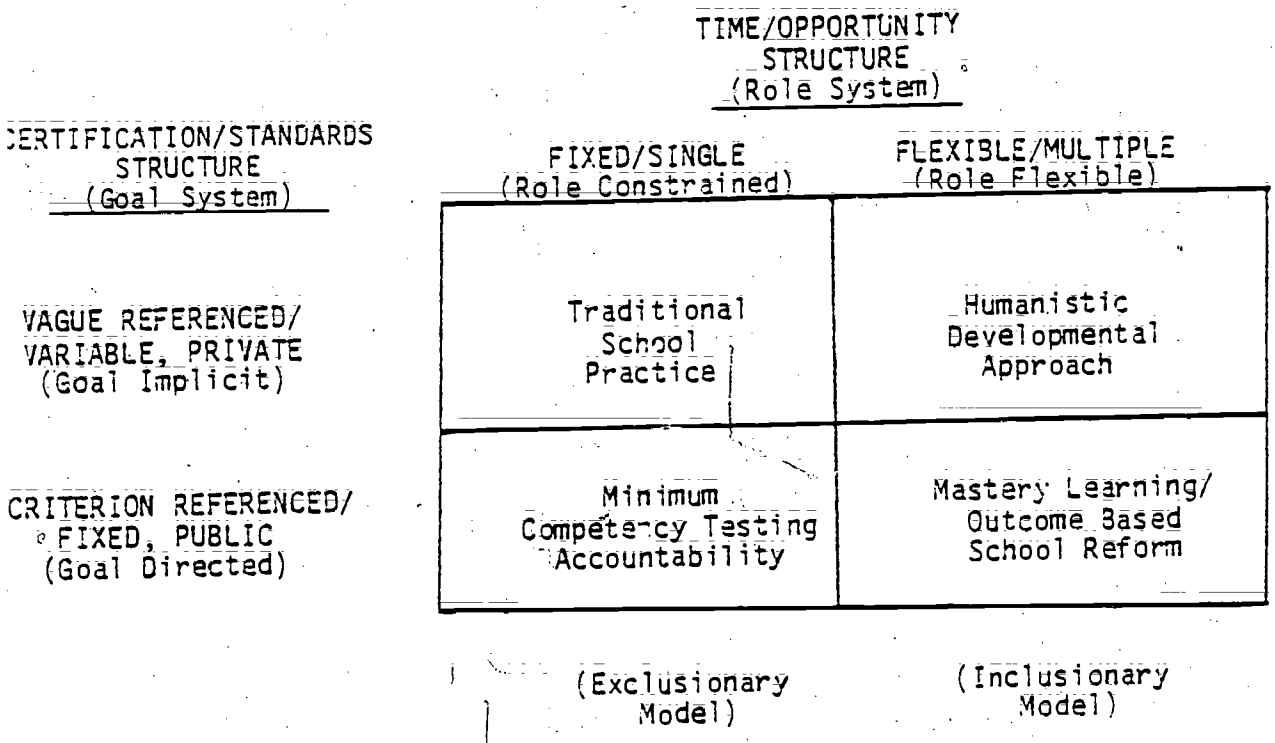

Figure 1 -- A Framework of Organizational Variables that Affect Instructional Operations

Note also that fixed-time/single opportunity delivery systems inherently possess an exclusionary selection bias in establishing conditions of success for students. That is, success is reserved for those who can meet whatever standards are set within the constraints of a predetermined amount of time, on their first attempt. Those who cannot, "fail" and are excluded from immediate and often permanent eligibility for advancement. The inclusionary model of opportunity represented on the right side of the figure is designed to keep access and eligibility open for those with any hope of eventual success. It embodies what Carroll and Bloom envisioned as the primary condition that made Premise 1 realizable.

The bottom row of Figure 1 represents the totality of what has come to be known as "The Competency Movement." But, as Spady (1978 and 1979) and Spady and Mitchell (1977 and 1980) pointed out at length, there are sharp philosophical and operational differences between accountability-oriented Minimum Competency Testing (MCT) programs and "reform" oriented ML and OB instructional models. Nevertheless, both "movements" represent a strong challenge to both the legitimacy and utility of the present vague-referenced certification system. The public demand, expressed through legislation and agency policies in over thirty states, that some kind of (either norm referenced or criterion referenced) standardized performance indicators be used as conditions of student promotion or graduation, has been forceful if not well conceived. Underlying it are a loss of confidence in the validity, meaning, and interpretability of teacher grades and a desire for learning standards that are more public, consistent, and objective.

What separates the MCT and OB approaches are basically different philosophies regarding the kind of opportunity conditions to be embodied in the school. The MCT advocates believe that tests administered at infrequent, predetermined times in the student's career should serve as the primary screening device for upward mobility on the grade-level ladder. OB practice, on the other hand, desires not only an expansion of the opportunity conditions in the school but also a much tighter, more frequent, and more facilitative link between assessment and instruction. As suggested by the five ML elements identified by Block, diagnosis and correction (i.e., formative testing) lie at the core of the day to day delivery of OB instruction in the classroom. Large scale survey (i.e., summative) tests for grade-placement purposes cannot serve these diagnostic and corrective functions in a useful way.

In general, then, the theoretical variables used in Figure 1 to describe the major structural conditions which differentiate traditional schooling and OB practice suggest that a fundamental and profound transformation of the certification system of schools is in order if the organizational conditions which facilitate OB processes are to be established. Traditional practice is fundamentally time/role based and goal implicit. The change required is one in which the structural conditions facilitate operations that are goal based and time/role flexible. In terms used earlier, this is a question of whether the program assignment structure dictates the instructional delivery schedule or whether the task assignment structure is flexible enough to maximize the instructional progress of all students. Very simply, what is at issue here is primarily a struggle over the timing of instructional delivery. It is also a struggle over whether what is delivered and learned is clear, specific and visible to all those with a stake in the child's learning progress, or is left to be interpreted from general labels and vague symbols on student report cards.

THE OPERATIONAL CHARACTER OF OUTCOME-BASED PRACTICE

When one examines the "essential" operational components of OB practice developed by the Network for Outcome-Based Schools in October, 1980, the bias toward visibility of outcomes and responsiveness in instructional delivery is unmistakable. It is the consensus of the NO-BS membership that the following operational components must be present in order to implement an authentic, fully developed OB instructional system:

1. Publicly determined and stated learning outcomes for all students.
2. Derived from these learning outcomes, a criterion-referenced assessment system which documents, records, reports, and awards

credit for student attainment.

3. Derived from these learning outcomes, objectives-based core and alternative curricula.

4. Derived from these learning objectives, a systematic process for planning and providing instruction appropriate to each student and for engaging the student until learning outcomes are attained. This systematic process includes:

   a. assessing current student skills/learning for instructional assignment;

   b. analyzing the content of each objective so that instructional strategies match assessment;

   c. when appropriate, sequencing tasks into a hierarchy of learning skills to maximize the effectiveness of instructional delivery;

   d. orienting students to the objective(s) to be learned;

   e. initial teaching to the objective(s) which provides varied approaches, adequate practice time, and multiple opportunities for learning and success;

   f. assessing student mastery of the objective(s) to determine the need for movement to a new instructional objective, extension/enrichment, or correctives;

   g. for those who attain mastery, progressing to the next objective or offering extension/enrichment; and

   h. for those who do not attain mastery, providing correctives, using different teaching strategies, until outcomes are attained.

5. A criterion-referenced information management system at the classroom and building levels for coordinating timely instructional planning,

student assessment and placement, instructional delivery, and program evaluation.

6. An evaluation/certification system which allows students to demonstrate and receive credit for improved levels of performance at any time.
7. A program evaluation component which guides instructional planning by comparing the learning outcomes of program graduates with the performance demands of post-school roles.

Learning Outcome Goals

The fundamentally open character of OB practice is suggested by Component 1 and is reinforced throughout the model. First, the public, as well as staff, has an important role to play in giving direction to the instructional enterprise. The outcomes sought for youngsters receive their legitimacy through the participation and endorsement in the goal setting process of all those with a direct interest in the schools and the eventual character and competence of young people. Second, once outcome goals are established, they are explicitly stated for all - including parents and students - to see, examine, and pursue. There are no surprises in OB instruction and assessment.

Third, adjusting these outcome goals is encouraged through the enactment of a program evaluation system (Component 7) which monitors changes in labor market, educational, and social demands as well as the quality of learning and development occurring in school programs. New goals can be established as new technologies, economic conditions, educational demands, or community changes emerge. Component 7 prevents Component 1 from

becoming insular, static, and excessively academic.

Fourth, as just suggested, the range of outcomes amenable to OB practice is not limited to concrete knowledge and paper pencil skills as some assume. As applied performance assessment technologies continue to improve, the potential for wide-ranging OB implementation increases. Many career education programs, for example, strongly embrace OB practices as the best way to motivate and instruct their students. OB practice is even catching hold in medical schools.

Fifth, the most important thing about Component 1, however, is that it is Component 1! That is, establishing the intended goals and outcomes of instruction (or schooling in general) occurs prior to any other steps being taken to assess or instruct. All of the other instructional components in an OB model (i.e., Components 2, 3, and 4) are explicitly based on and derived from these visible and explicitly stated outcomes.

Criterion Referenced Assessment and Reporting

Component 2 may be the most revolutionary and far reaching element in OB practice since, for most school systems, it requires major changes in the substance, processes, and uses of student testing and evaluation.

First, this component requires that criterion-referenced indicators of all stated outcomes be established before either curriculum development or instruction take place. Operationally these indicators represent and embody the outcome goals, that is, they indicate what it means to develop the capacities and demonstrate the behavoirs described in the outcome goal. In an OB system, these criterion indicators become the tangible targets of instructional effort, and, contrary to traditional educational mythology, teachers should deliberately direct their teaching to the test (i.e., the

performance indicators of the outcome goal sought). What seems alien about the foregoing statement is that under most conditions, the tests which teachers resist are those developed by commercial firms or state agencies which may not match the curriculum or goals they have selected for students to pursue.

The second revolutionary implication of this component is that both teacher record-keeping and reporting systems need to be designed to match the performance criteria which embody these publicly stated outcome goals. Such a system records the results of student assessments in terms of the specific criteria being assessed and uses that record as the report of student progress. The record shows precisely what things a student has done well and what has yet to be mastered, for this level of information is required in order to decide where to target instructional assistance for the student. Judgments about the adequacy of a student's rate of progress, comparative standing with other students, or other types of non-instructional behaviors and attributes, if they are to be made at all, must use this criterion-referenced performance record as a starting point rather than contaminating the record itself with labels and symbols which serve no diagnostic purpose.

This requirement adds a tremendous degree of clarity and precision to student assessment and evaluation which conventional teacher records cannot match. It also requires a tremendous adjustment in orientation and technique on the part of staff who are used to translating student homework and test results directly into numerical scores and letter grades and recording, averaging, and reporting these symbols to parents as if they were valid performance indicators themselves. Very simply, this component makes a sharp distinction between student learning and teacher evaluation and reporting.

Third, Component 2 provides the impetus for a fundamental rethinking of the concept of "credit" (i.e., program and/or grade level assignment). As reflected in this Component, OB practice requires that credit or program advancement be based on the attainment of specific, public criteria. This, in turn, requires that major organization-wide decisions be made identifying which specific criteria will operationally become the decisive cut-off points for various programs or grade levels.

It is my personal conviction, after having examined this problem closely for nearly six years, that these decisions must essentially be political rather than "educational" or "scientific" since most skills or information-oriented curricula have few easily defined or professionally advocated threshold points. While there is not room in this paper to develop sufficiently all of the arguments and evidence about these issues that should be aired, I believe that the dilemma created by having to set specific, "arbitrary" criteria standards for credit or promotion is that the latter two concepts as traditionally operationalized in time-based, role-based, vague-referenced school operations are fundamentally incompatible with OB operational requirements.

For example, the combination of Components 2 and 6 implies that "performance credit" in an OB model fundamentally inheres in the performance record itself. That is, whenever a student "masters" a given objective by demonstrating the appropriate performance indicators, she/he is "credited" with mastery of that objective on the performance record. In other words, credit for mastery is documented and built into the record itself. How many objectives a student must master before being given a "unit" of credit is an administrative/political question that cannot be precisely answered from an OB perspective.

The problem is created when eligibility for the next step in the learning sequence also has time conditions associated with it. This, according to OB theorists and practitioners, is precisely what is inherently misguided and confusing about conventional practice, because instructional delivery is predicated primarily on the clock, schedule, and calendar rather than on the learning readiness of the student.

If, for example, long division (LD) is only taught in "Fourth Grade Math" (FGM), then students should be eligible for FGM whenever they develop the cognitive prerequisites required for learning LD. And, they should receive credit for FGM and become eligible for whatever comes next as soon as LD is mastered. Another problem is created when time itself, as in the case of the "Carnegie Unit," becomes an essential condition in the definition and granting of a "unit" of credit.

Therefore, while the issue of student promotion standards is one of the most politically heated in many local districts, from an OB frame of reference, it is a false issue. It is the inertia of time-based, age-grade, one-shot instructional delivery mechanisms which makes OB implementation so difficult to achieve, partly because it is accompanied by virtually permanent fixed-time administratively convenient, student assignment structures as well. From an organizational perspective, then, OB practice requires that the now pervasive but artificial age-grade assignment structure of schooling be subordinated to the requirements of a time-flexible continuous progress task assignment system. This means that access to different program categories could be allowed on a time flexible basis such as that described on page 14.

Simply stated, then, OB practice assumes the availability of a continuous progress instructional delivery capability in which student eligibility for program advancement is not predetermined by arbitrary time factors.

The documented OB performance record of objectives mastered establishes the student's instructional eligibility status.

Curriculum

The design and delivery of curriculum typically poses three problems for OB implementers. First, few commercially developed curriculum materials are organized around outcome goal-derived learning objectives, particularly in subject areas outside reading and mathematics. Consequently, practitioners face two important curriculum related challenges before comprehensive instructional implementation can begin. The first is to translate the publicly derived learning outcomes established in Component 1 into discrete, well-sequenced sets of manageable instructional objectives. The second is to compare the content and behavioral requirements of these objectives with existing curriculum materials.

The results of this comparison typically allow for three kinds of choices. The first is to develop in your own district materials which serve the exact needs of your students and your objectives. This alternative was taken by Chicago and Washington, DC, among others, when the gap between their objectives and available materials appeared too large to justify. The second alternative, selected by Red Bank, NJ, is to incorporate materials from several different sources or publishers into the curriculum design on an objective-by-objective basis. They found that any given set of materials might only satisfactorily address a third to half of the objectives selected. Therefore, many different sources had to be used to assure adequate coverage. The third alternative, chosen by Johnson City, NY, was to use the materials of one particular publisher because they offered a close, objectives-oriented, approximation to the outcome goals

Johnson City had chosen. However, district or teacher designed supplementary and corrective materials have been found to be necessary by virtually all OB districts.

The second major curriculum issue that must be faced is whether a given array or sequence of objectives forms a validated learning hierarchy for given kinds of students. Serial sequencing should not be confused with conceptual, skill, or content sequencing. This has tremendous implications for both curricular design and instructional delivery. An excellent example of this problem is illustrated by a comprehensive "Integrated Flow Chart" of mathematics skills developed by Stephen Rubin (1967) of the New Canaan Public Schools, New Canaan, CT. Rubin's "road map" demonstrates the dozens of discrete routes (sequences) that could be travelled in getting from "counting" to "algebra," each of which requires specific prerequisites, some of which may be very different from those in a parallel route. Flexible and responsive delivery allows each student to pursue the route that works best for her/him, as long as all routes are eventually covered. Commercial publishers, however, usually have charted one fixed route through their graded materials for all students to follow.

The third major issue concerns the terms "core" and "alternative" curricula. Very simply, each is intended in Component 3 to convey two meanings. Core refers both to terms like basic, essential, and required which denote the scope of curriculum/subject coverage demanded of all students, and to the major content or experiences provided in the initial or primary instruction related to a specific objective. Alternative means both "elective" in relation to curriculum/course selection and "additional" in the sense of providing supplementary materials for enrichment or corrective purposes following initial instruction. The central

implication of these dual definitions is that all types of curriculum materials and experiences can be oriented toward an OB approach, not just those in "basic skills."

Instructional Process

Component 4 represents the core technology of OB instruction. Its eight elements represent an elaboration on and a more dynamic description of the five elements of ML instruction identified earlier by Block. The three OB components just discussed are its critical enablers in that these learning goals and objectives, assessment tools and record keeping systems, and curriculum materials make it possible for teachers to engage in an instructional process that is oriented toward and built upon the learning outcomes being sought.

These eight elements in Component 4 suggest that: 1) assessment should precede instructional assignment or delivery so that students are always placed in learning situations from which they can benefit (i.e., if students already know something, why put them back through it?); 2) what is to be taught must match what students are expected to be able to do; 3) truly hierarchical learning sequences should be developed and used whenever they are inherently imbedded in a series of learning objectives; 4) students should know the objective they are trying to reach and what successful mastery looks like before instruction begins; 5) even initial instruction should employ different methods/strategies for students with different learning styles; 6) formative/diagnostic assessment should follow initial instruction in order to provide a decision making frame for subsequent teacher activity and student task assignment; 7) faster students should be

given new challenging experiences if additional time is required for others to reach mastery on the same objective; and 8) students who do not initially attain mastery should be given additional, corrective-focused, new instruction until they do.

While considerable disagreement exists among OB advocates concerning the best strategy for student grouping and instructional placement, they do agree that Component 4 is describing an achievement grouping, rather than age or ability grouping, model of delivery. That is, instructional placement and delivery are based on having in the same group, whether it is large or small and whether they are of similar ages or abilities, students at a very similar level of actual achievement. Consequently, it could be argued that OB instruction is always "group based," even though achievement groups might be quite small in some delivery models.

Information Management System

Component 5 as stated on page 19 is highly consistent with Spady's (1977) description of Competency Based Educatton as data based and adaptive. What needs to be added to this characterization is that the entire management model for OB practice at both the classroom and building levels is assessment driven.

Timely instructional planning and delivery, timely and accurate student assessment and placement, and accurate program evaluation are all dependent on the ready availability of information on how each student is performing on which objectives. Without a record keeping system that is referenced against the objectives being pursued, up-to-date, and available to all potentially involved staff, there is almost no way of making OB instructional management decisions. Instead, teaching ends up being driven by the inflexible organizational RUSE (i.e., the Routinized/Uniform Scheduled Events) which reinforces everything about schooling that is time and role

based.

Although this proposition may at first appear to be simplistic or misleading, OB practice is in fact grounded on the assumption that quality and effectiveness of instruction are dependent on quality and effectiveness of assessment. Its validity rests on the fact that quality of instruction is related to the eight conditions identified on page 9, two of which are direct reflections of the assessment process itself and at least three others are indirectly facilitated by it. The unstated critical condition that must also be met is that staff must intelligently use the assessment data they collect (which, countless OB implementation struggles suggest, they are not accustomed to doing).

In brief, teachers with a diagnostic/adaptive eye to instructional management can use student formative assessment data to: 1) monitor student progress on a specific objective, 2) discover specific areas of student strength and weakness, 3) assess the effectiveness of particular instructional materials or approaches, 4) regroup students for subsequent instruction, 5) design or prescribe particular correctives for specific students, 6) revise the content, approach, or timing of the assessment instrument itself, 7) revise the substance, sequencing or timing of curricular units, and/or 8) identify students in other classrooms at similar learning levels to their own. This presupposes a commitment to professional improvement and stands in sharp contrast to the "instructional failure syndrome" described by Joan Abrams, Superintendent in Red Bank, NJ: 1) teach, 2) test, 3) record student grades, 4) go to the next chapter, 5) teach, etc.

Assessment driven OB teachers no longer define success as "getting through the book by the end of the year." The issue for them is not whether they have "covered the material" but whether students have mastered

a significant number of the essential objectives. Having accurate student performance data available on a daily basis allows correctives to be applied to the instructional delivery system as well as to student learning to assure that this occurs.

Having direct access to an up-to-date student performance record system also enables principals to provide teachers with far more instructional management assistance than before. Rather than monitoring teacher performance and instructional delivery by infrequently examining lesson plans, grade books, and annual achievement test profiles, principals can identify strong and weak areas in the curriculum, students particularly ahead of or behind their peers, and teachers with particular strengths and weaknesses. In fact, if anything, all of these OB components place a heavy responsibility on principals to help the entire teaching staff coordinate instructional delivery so that few students are put in unproductive "holding patterns" while others receive the bulk of teacher time and attention.

Success Oriented Record Keeping

Component 6 fundamentally alters the time orientation and purpose of traditional student record systems. As described on page 20, this component more than any other, reinforces the "success orientation" of OB models. In brief, it reflects the simple reality that student knowledge and skills in most areas continue to improve after an initial period of instruction and formal grading (i.e., a semester or school year). Yet in most situations, the grade awarded stands as a permanent historical record of the initial performance evaluation.

By allowing improvements in performance to be validated and recorded

at any later point, OB practice conveys to students the benefit of striving to increase their learning. The term used by John Champlin, Superintendent in Johnson City to describe this adaptive approach is "open transcript." This conveys both the multiple-opportunity character of OB assessment systems and the reality of OB performance records providing up-to-date profiles of current student achievement successes.

Program Evaluation

As noted in the discussion of Component 1, OB goal setting and program evaluation do not occur in a social or historical vacuum. School administrators must regularly seek community input and examine educational, social, technological, and economic trends in order to adapt outcome goals and instructional programs to the realities students will face when they leave school. Static configurations of school subjects and textbook based instructional delivery inadequately reflect or prepare students for the role demands of late twentieth century life. This reality has guided the policy thinking regarding high school graduation "competencies" in several states during the 70's and must be used in shaping OB practice if it is to facilitate success in life as well as success in school.

OUTCOME-BASED PRACTICE AND ORGANIZATIONAL POWER

The foregoing discussion has described the philosophical premises, optimal instructional conditions, and operational components of Outcome-Based practice and suggested how they are related to apparent attitudinal, role performance, and structural obstacles to their implementation. What I intend to examine very briefly in this concluding section is how all

six of these factors are related to what may be the most sensitive and intransigent point of potential resistance noted on page 8: the system of power and incentives which governs school operations.

The Four Functions of Schools and Classrooms

Spady and Mitchell (1979 and 1980) provide an extensive theoretical analysis of the fundamental goal and role problems confronting all formal organizations. They see the school serving as a publicly supported agency of the society to engage in the moral and technical socialization of youngsters so that: 1) these fundamental goal and role problems can be reduced if not entirely resolved at the societal level, and 2) youngsters emerge from this socialization experience having achieved social responsibility, social integration, personal competency and formal qualifications for pursuing post-school education or employment.

In order to accomplish these outcomes the school is compelled, at both the organizational and classroom levels, to engage in four pervasive and overlapping functional activities: instruction, acculturation, supervision, and certification. Each of these functional activities attempts to engage the student in a particular mode of action with a unique target of emphasis. These four "games" are learning, status, citizenship, and credit.

In effect, each of the functional activities also organizationally represents an operational "curriculum" for the pursuit of the intended outcome. In their analysis, they associate four historically familiar terms with each of these overlapping operational curricula. The official curriculum is embodied primarily in the instructional system, the extra

curriculum in the acculturation system, the hidden curriculum in the supervision system, and the required curriculum in the certification system.

The Inherent Power of the Certification System

The focal point of their analysis, particularly in the 1980 paper, is that the fundamental leverage of the school over students resides in its unilateral power to certify; that is, to provide students with the "formal qualifications" needed for promotion, college admission, and desirable employment. Because students feel they need credentials as badly as they need the knowledge and skill which presumably underlie them, the "credit game" and "learning game" become easily confused.

The issue is joined in their analysis when they show that the entire time and role structuring of schooling also creates an overlap between the "citizenship game" and the "credit game." In other words, what gets certified is both attitude, deportment, punctuality, and attendance on the one hand, and vague-referenced, subjectively defined learning performance on the other.

Their point is not that schools or teachers deliberately distort and confuse these two agendas (although overwhelming experience suggests that they regularly do), but that the very structuring of the certification system and the privatization of certification (i.e., grading) decisions both lead to tremendous inconsistencies in evaluation standards and grades and gives individual teachers the professionally legitimated and endorsed right to grade students however they choose. Because of the overlap between the supervision and certification functions, grades are a powerful devise for controlling student behavior.

Since Outcome-Based practice seeks to clarify and make public outcome goals and performance criteria, it removes most of the overlap between supervision and certification, severly reduces teacher autonomy in establishing grading standards, and thereby fundamentally alters one of the major pillars of perceived and actual teacher power.

In addition, OB record keeping systems enable administrators, other teachers, and parents to readily monitor and comprehend the status of learning progress for students. This is unquestionably perceived as a threat by many teachers who, if only because of customary practice, are uncomfortable with having "outsiders" in or near their professional domain.

What teachers must be willing to risk, I believe, and what experienced OB implementers consistently confirm pays off, is the potential for loss of influence over students when the evaluation/certification system is transformed from an exclusionary, comparative, control oriented one to an inclusionary, diagnostic, success oriented one. According to many OB practitioners, student learning success and discipline problems appear to operate like a see-saw. When students begin to experience a genuine sense of success and consistent intellectual engagement in the classroom, even pervasive patterns of disruptive and violent behavior diminish dramatically. It appears, then, that the trade-off for teachers, which is also strongly supported by the Spady-Mitchell theoretical work, appears to be a choice between security through effectiveness versus security through autonomy and enforcement.

IMPLICATIONS FOR FOLLOW THROUGH

The foregoing analysis has identified the basic philosophical premises, optimal learning conditions, and operational components associated with fully developed Outcome-Based practice and has attempted to strike a balance

between the emerging power of this approach and the numerous attitudinal, technical, structural, and procedural points of resistance that are inherent in its implementation.

The dilemma faced by current OB advocates who see enormous potential in this approach for Follow Through clientele is that they lack the systematic data required to "justify" the model's overall effectiveness, even though individual district improvements such as those mentioned on page 6 are obvious to those conducting the programs (and are occasionally rather well documented). One major paradox in this situation is that one of the strongest reviews of the research on Mastery Learning effectiveness by Block and Burns (1976) is limited to studies done prior to 1975, but many of the strongest programs known to members of the Network for Outcome-Based Schools did not even begin until then or later.

Another paradox is that only recently have ML practitioners come to appreciate the inherent organizational obstacles underlying the attitudinal and technical issues they were addressing in staff development programs during the past decade. Their growing awareness and sophistication in dealing with these issues will undoubtedly strengthen what are already rapidly improving programs.

Despite the limitations of formal validation data sources, however, there is a strong case to be made for implementing fully developed OB models in Follow Through sites. Philosophically, as well as empirically, this approach is inherently suited to the clientele served by Follow Through programs and possesses an operational character that is well suited for affecting positively both the cognitive and affective outcome agendas sought by a variety of current Follow Through models. Recognizing that OB practice resembles some of these models, its unique power appears to be that it

possesses a fine balance between focus and flexibility, and structure and responsiveness, and that it contains elements suitable to a variety of student motivational and learning styles without leaning heavily toward any one orientation. That is, it is as inclusionary in its methodology as it is in the conditions for student learning success it tries to establish.

A final point regarding the inherent appeal of OB practice for Follow Through implementation is its basic openness. Public involvement in goal setting, public visibility of objectives and standards, and performance records and reporting systems which describe the actual behaviors being sought all help to "demystify" the educational process and facilitate clearer understanding and communication between parents and the school.

The Network for Outcome-Based Schools itself represents a unique and powerful resource for technical assistance and implementation to any sites oriented toward OB practice. It can tap resources in any section of the United States and provide many sites as (differing) examples of how particular components can be defined and managed. Its potential as both a catalyst and resource for school improvement rests on the diversity and well established expertise of its membership.

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