Judicial pronouncements and legislative acts in recent years have established the responsibility of schools to provide educational services for each child, preferably in the educational mainstream. Mainstreaming represents an effort to provide equal opportunities for education to all children. A brief treatment of some of the foundational aspects of the mainstreaming movement is presented in this paper followed by a discussion of some of the shifts in concepts and new approaches that increase the capacity of schools to accommodate children who show a wide range of learning needs. (Author/MLP)
Mainstream Education:
Focus on Individualization

by

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Despite the long history of compulsory school attendance laws in virtually all states in the Union, until very recently significant numbers of children either were never admitted to public schools or were prematurely demitted. In the Congressional testimony on the Education for All Handicapped Children Act of 1975, for example, it was estimated that one million handicapped children in the United States were receiving no education whatsoever; we do not know how many children were out of school because of other reasons.

In almost every community, the greater proportion of children have been selected for inclusion in the educational mainstream—the regular classes and schools. Other children have been excluded from this mainstream and isolated in special classes or other segregated stations, and not necessarily because these stations provided better services for them. A few children in each community, but totaling hundreds of thousands nationally, have been removed from the possibility of attending public schools, separated from their families, and assigned to residential centers of various kinds.

Granted that some children have needed the specialized attention that is available in special settings, nevertheless many other children have been excluded from the mainstream of education or community life at the convenience or for the comfort of the mainstream institutions. In almost every instance of special placement, the reason for the inclusion was usually laid to something in the child rather than to the accommodative capacity of the school.

In the past half dozen years a wave of judicial pronouncements and legislative acts has served to change the scene. We are entering, currently, a zero-demission era. Schools are required to take the responsibility for providing educational services for each child, preferably in the mainstream. None may be excluded totally from educational opportunity, and any decision to displace a child from the mainstream for educational purposes must be justified in terms of enhancing the child's opportunities and life.

The mainstreaming movement is highly conspicuous in special education and is rapidly gaining recognition as an influence on all of education. Mainstreaming involves a renegotiation of relations between what has been, in the past, two largely separate school systems—"special" and "regular"; it involves major changes in the processes and structures of schools which may rank with the changes associated with racial desegregation and compensatory education for the "disadvantaged."

A brief treatment of some of the foundational or undergirding aspects of the mainstreaming movement is presented in this paper. A number of the concepts, especially those contributing to the consolidation of regular and special educational efforts in behalf of exceptional children, holds especial significance for the administrators of school systems and the trainers of such personnel.

A Value Change: Primacy of the Individual

One critical aspect of education, currently, is a partial shift from the public side to the individual or private side in defining the purposes of education:

The private role of education is to provide a chance for individual fulfillment, principally intel-
lectural but also artistic, social cultural, vocational and societal, to give an individual an opportunity to find the education he [or she] needs to achieve his [or her] own ends. The public role of education is to serve the society that supports it by acting as a medium for social cohesion and social advancement, maintaining and passing on the national culture, refreshing and adding to our body of knowledge, sorting out talent, and providing an education that will match a great variety of talent and career opportunity. (Eurich et al., 1973, p. 160)

This shift reflects the belief that education, if directed to literally all children and emphasizing their private ends, will, in fact, lead to sufficient socialization and commitments to the public good to sustain our society and, indeed, to nurture its growth of freedom and prosperity.

Educators presently are mandated not only to enroll all children who are presented to the schools and to place them in appropriate programs, but actively to seek out all children for enrollment, including those with special needs. The ability or potential of the individual to contribute or make a return to society or its institutions is no longer the proper test for determining a child’s educational opportunities. It is sufficient if all that can be anticipated for a child, even a handicapped child, is the enhancement of his or her own life.

The Council for Exceptional Children, in a Policy Statement, defined this principle of education as...the philosophical premise of democracy that every person is valuable in his [or her] own right and should be afforded equal opportunities to develop his [or her] full potential. Thus, no democratic society should deny educational opportunities to any child, regardless of his [or her] potentialities for making a contribution to society. (Council for Exceptional Children, 1971)

For many purposes, it is useful to think of three levels of payoff: societal, institutional, and individual. In some situations, societal goals are held to be paramount and institutions and individuals are manipulated as necessary to achieve them. Such situations might be characterized as highly “Sovietized.” In democratic societies we permit the domination of societal payoff at times of extreme national crises, such as war. Ordinarily, we assume that most people reject the ultimate forms of Sovietization and, instead define the good society as enhancing the development of individual lives and fostering the emergence of largely free institutions. In other words, most people would state the ultimate goals of a democratic society in terms of individual lives and, perhaps, particular institutions, while holding to the faith that the aggregate results produce a good society.

In past decades, however, decisions about handicapped persons have not always been made in terms of individual payoff; rather, they have been made and justified on the basis of societal or institutional “rates-of-return.” As late as the 1950s it was argued that seriously handicapped children need not be served by the schools because their returns to society are minimal. In one famous debate, a participant held that

Public education is...based on the belief that as a result of learning, the individual will be able to assume a self-directed role in society, and that he [or she] will probably assume responsibility for others--his wife and children or parents. * (Goldberg Cruickshank, 1954)

Often, in pleas for more funds and expanded programs for handicapped students, it was claimed that when handicapped persons were educated and trained to become self-supporting, society was repaid because the persons would pay taxes and could be removed from welfare roles. Alternatively, it was argued that the education and employment of handicapped workers is “good business,” that is, it provides dollar payoff for institutions. These claims may be true in most cases, but they no longer are acceptable as the starting point in planning for handicapped students.

The truly noteworthy fact is that payoff to society or particular institutions is not the focus of recent social policy statements, as expressed through the Congress and the Courts. Nor are institutional values predominant in due process hearings for exceptional students. Rather, the ruling principle is the enhancement of the individual’s life.

For example, even if more public funds must be expended to teach severely handicapped children to feed themselves than it costs to give them a liquid nutritional gruel to drink three times daily, the policy now is that educators shall get on with the teaching-learning tasks involved in self-feeding. The aim is to insure every individual, to the extent that it is feasible and equitable, opportunities to set purposes and order in his/her own life, pursue goals on the basis of well-developed skills, and enjoy a fair share of life’s pleasures in a pattern of his/her own choosing.

Under recently enacted laws (PL94-142) individual educational plans are required for each handicapped child. The school is judged to have met its commitment to each handicapped child when a unique, “appropriate” plan has been drawn up and implemented for each student. The test of equity is: equal input in dollars or equal output in achievement all students; rather the dialogue and the test are directed to finer points.

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Some Conceptual Shifts

The remainder of this paper consists of brief discussions of topics which are considered basic to the mainstreaming trend and value shift. They represent some of the conceptual shifts, often involving new tools or techniques, which are taking place in the field of special education, and in the larger context of education, as the boundaries of special and regular education are renegotiated. They are the content of the reeducation of teachers, but they need the attention of administrators as well.

Changing Systems of Measurement

Emphasis on the individual entails new measurement and decision systems in the schools. Historically, educational measurement systems have been based on age-grade norms or social comparisons, as in the construction of tests and test items to produce interpersonal variance or establish population standards. The testing systems were strongly oriented to simple predictions and selection/rejection decisions. Such measurements have come to be recognized as discriminatory and unfair and have led to profound changes in school systems.

In her presidential address to the American Psychologist Association, Tyler (1973) examined what she called a "frontal onslaught" on testing in our society. She described one of the important conceptual shifts as follows:

Instead of assuming that someone is going to use the test . . . to select the persons most likely to succeed in a particular situation . . ., it is possible to begin with an assumption that the purpose of the test is to analyze what each person who takes it has to offer, so that a suitable place can be found for him or her. Another way of putting it is to say that tests are being designed for the benefit of test takers rather than for the benefit of employers or admission offices. (p. 1023)

Norm-referenced testing has a variety of valuable uses provide useful self-knowledge. Festinger (1954) argued very persuasively that one method individuals use to build self-concepts is to make active comparisons of themselves with other people. For example, to a sprinter training for the 100-yard dash, it is important that he be able to compare his performance with that of others, to see himself, in other words, in the context of a "norm group."

Furthermore, it is useful for a person to have both norm-referenced data and predictive indices of the very best kinds when (s)he tries to make decisions on future educational programs, vocational roles, or institutional affiliations. And, of course, norm-referenced tests are used quite legitimately for institutional decisions by, for example, professional schools that choose the most promising of a large pool of candidates for a very expensive training program.

However legitimate and important norm-referenced tests and institutionally oriented decisions may be under some circumstances, additional approaches to measurement and decision making are essential in the context of today's schools. The dominant use of norm-referenced evaluation procedures in early schooling, in which all children are required to participate, is part of a system that has made it difficult for some children to feel fully valued and accepted in the schools and community, and is one basis for the criticisms of schools as "sorting mechanisms" for an elitist society.

When the aim is to maximize individual payoff (Fig. 1),

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Figure 1

A Decision-Payoff Matrix

<table>
<thead>
<tr>
<th>Who Gets the Payoff?</th>
<th>Data Required</th>
<th>Type of Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions</td>
<td>Simple predictions - depending mostly on norm-referenced tests or observations on variables that magnify individual differences and correlate with outcomes that have institutional utility.</td>
<td>Selection/Rejection</td>
</tr>
<tr>
<td>Individuals</td>
<td>a) Aptitude-Treatment-Interactions (ATI) and/or b) &quot;Rate&quot; of performance or learning in different systems and/or c) Domain or criterion-referenced test results in competency areas</td>
<td>Instructional Placement</td>
</tr>
</tbody>
</table>
the problem of testing becomes one of choosing or helping to design appropriate educational environments and procedures that will maximize each child's performance. Placements decisions would be simple, indeed, if one assumed that all children can and should be educated through exactly similar procedures. However, all teachers, implicitly or explicitly, make what might be called the "ATI" assumption: the assumption that all children differ markedly in important aptitudes or other attributes which, in turn, indicate the use of different instructional programs to optimize education for each individual. The clearest cases are the totally blind or profoundly deaf children who, obviously, cannot learn all subjects by the methods and materials that are commonly used with other pupils. Other and more subtle differences among children are equally important for instructional planning.

The ATI idea had its origin in education in the work of Cronbach and Gleser (1965). It requires demonstration that an aptitude or attribute shows interaction with two or more treatments or instructional variations; for example, if two instructional procedures are possible, the variable that produces a disordinal interaction with the treatments becomes the basis for decisions to optimize individual opportunities. In the measurement context, it is notable that the critical datum is the differential slant of two or more regression lines rather than the simple high-regression coefficients.

Unfortunately, we do not yet know much about the variables that interact with alternative educational treatments. Investigation of these variables should be high on the agenda for researchers and clinicians alike. Since teachers constantly make informal ATI-types of decisions, it is important that measurement specialists go to work to assist teachers in this difficult although promising area of decision making.

Something functionally similar to an ATI decision can be achieved quite differently by trying out several different methods or environments with a child and assessing carefully which approach works best. Teachers follow these procedures whenever, for example, they try teaching a specific skill within the framework of a game vs. drill procedures, or when they compare rates of a child's performance in a highly structured vs. an open framework.

A final approach indicated in Figure 1 is domain and/or criterion-referenced testing procedures. In carefully sequenced and individualized instruction, it is important to use tests that reflect domains of knowledge or skill and permit meaningful decisions in terms of the individual.

Gleser (1973) made a complementary point in a statement on the changing nature of testing:

[Testing] ... will become an integral part of the educational process itself. For instructional purposes, tests will be interpreted in terms of performance criteria so that student and teacher are informed about the student's progress relative to standards of competence, and, in this way, provide information for deciding on an appropriate course for instruction. (p. 564)

1 --Aptitude-treatment-interaction.  
2 --For a discussion of disordinal and ordinal interactions, in the context of ATI decision theory, see Bracht & Glas (1971).
As shown in Figure 1, one can make selection/rejection decisions that maximize institutional payoff whenever one has a predictive device and a policy that permits the selection only of some individuals. Traditionally, psychological testing in the schools has been undertaken within this kind of framework. The tests most commonly used have been validated on the basis of simple predictions, and the test items have been selected precisely because of their discriminatory power, rather than because they provide an adequate representation of some meaningful performance or knowledge domain. The manuals for such tests typically provide norms that are based on age or grade.

The Concept of Expectancy in Education

Historically, educators have had great interest in predicting child achievement. Such predictions often have been translated into statements about the capacities of and expectations for children. The linkage of simple prediction and capacity was taken for granted.

An early side effect of the academic prediction movement, which mostly used general intelligence test results as the predictors, was the development of individualized grading systems. It became a matter of misguided fairness that some children should be "expected" to achieve more and some less, and that school report cards should reflect each child's achievement in relation to his/her individual capacity. Let it be said immediately that accuracy about what to "expect" of every child is a sure impossibility.

A refinement of this procedure was the special attention given to those children whose capacity was high but achievements were low--the so-called underachievers or "learning disabled." Somehow, children achieving "below capacity" were made a special clinical group. It might equally have been argued that all children were doing exactly what should be expected of them if only we knew enough to make accurate predictions or to judge their capacities appropriately. In any case, the discrepancy cases might have been called the "overpredicted," putting the onus on the testers, rather than the "underachievers," which put the onus on the children. Discrepancies between mental age and achievement age or between IQ and AQ are not indicators of special aptitude for better work, yet millions of dollars were invested to support the assumption.

Strangely, these discrepancy variables, which reflect differences between so-called capacity and achievement, never have been carefully studied although they have been enormously popular in drawing distinctions between remedial or learning disability cases and mental retardation. The assumption was that children with high capacity but low achievement belonged to a different instructional category than those showing uniformly low, flat profiles, and there was a pervasive pessimism about the educability of children with low capacity estimates because so little was expected of them. No wonder parents of some "retarded" children became hostile toward schools.

A subtle form of discrepancy analysis, using profile interpretations, was based on the assumption that the general level of a profile yields some kind of capacity or expectancy level; thus, departures from the flat median line represent needs and potentialities for remediation. By some mystical process, the average of several scores becomes the "expected" level on each variable, and presumably flat profiles are preferred over irregular ones. Profiles across a whole battery of tests that show some high and some quite low scores are assumed to be anomalous in some intrapersonal way and, therefore, an appropriate basis for remedial action. The low scores presumably represent "defects" destined for special treatment. A particular problem with many profile procedures is that reliability is low on some scales, and the proper use of regressed profile scores can sometimes turn a profile on its head. This form of discrepancy analysis stands up to rigorous examination no better than simpler approaches using general intelligence as the standard.

Lately, a number of breaks has occurred in the rigid molds of past notions about capability for learning. Because the new sources of the new viewpoints are many, there is not space to review them here. In general, the emerging view is that what might be expected of a person is, in important part, a function of his/her culture and his/her particular environmental history. It is increasingly appreciated also that "intelligent" behavior has many noncognitive determinants. Classifications of individuals according to simple intelligence test results or other capacity estimates are not so secure; and classifications according to discrepancy systems involving differences between capacity and achievements are tenuous, indeed. In this context, consequently, specific doubts and embarrassments inevitably arise over such classifications as "retarded," "underachiever," "remedial case," and "learning disabled." Such classifications have little valid use in making instructional decisions.

The implications of changing views on human capacities include the making of early childhood education, particularly in disadvantaged communities, a primary target for action. The pervasive attitude in this work is that where the rates of child development are low perhaps we can do more through systematic enrichment of the environment to produce fuller individual development. The assumption is not that the children's "capacities" are necessarily low; in fact, it is hard to know how to advance a decent hypothesis about the capacities of individuals. Nevertheless we can proceed with attempts to improve learning environments everywhere.

Again, the concept of aptitude-treatment-interaction (ATI) is promising as a way of looking at the various "capacities" of individuals. Indeed, the field of special education exists on the assumption of something like ATI; that is, that individuals differ in the kinds of educational programs that are best suited to them and that it is possible to observe characteristics of individuals (aptitudes) in such a way as to "match" characteristics with the most promising approaches (i.e., instructional programs or other aspects of environment) for each person. The ATI concept, in a sense, represents a philosophy as well as a technical approach to the study of learners and learning environments.

In summary, one can say simply that there is no such thing as the capacity of a child for learning. Children have many different capacities for learning depending upon their life experiences and how they are taught.
Handicapped children all over the nation are being taught and are learning at levels well above what, in the past, was "expected" of them. There is reason to wipe out much of what has been said about children's "capacities" and to accept, instead, a greater responsibility for arranging environments that make a positive difference in their lives.

The Classification and Grouping of Children

A visit to almost any school reveals remarkably complex patterns of movement and classification. In elementary schools, children are grouped mainly by age and grade. Later, in junior and senior high schools, groups are organized by subject matter as well as age and grade. Much of the general grouping in schools is controlled by central administrators and school boards who declare which buildings shall serve what purposes. A great deal of classification and grouping goes on within each classroom or instructional setting, however. The band director decides who shall play first trumpet and who, second trumpet, and the pupils space and engage themselves accordingly. Or, the teacher sets up three or four reading groups, or if some pupils are ready for more advanced work, they are grouped separately.

The major variable in schools for purposes of general classification and grouping is chronological age. In most school districts, a child enters kindergarten in September of the calendar year in which (s)he reaches 4 and then (s)he progresses year by year in age-grade groups. Some districts permit early entrance for children who show very high achievements and readiness for school. But this brief account is not the whole story.

One broad set of complications in the classification of children has come from the field of special education. The dominant organization of special education has involved a variety of categories for the classification of children: mental retardation, learning disabilities, speech handicaps, emotional disturbance, hearing impairment, vision impairment, and crippling and other health impairments. Classroom groups, teacher certification, legislative funding systems, and parent groups have tended to follow the same categorical delineations. Patterns differ somewhat from one state to another so that, for example, some states provide for a classification of brain-injured children and others do not. Regular teachers have learned to refer children according to the existing systems of categories, and school psychologists and other personnel workers have performed their functions at the gateways.

A number of problems emerges in connection with the categorizing of children and programs, especially when labels with negative implications are attached to individuals, as in mentally retarded, emotionally disturbed, or learning disabled. Hobbs (1975) saw such labels as potentially extremely harmful: "...classification, or inappropriate classification ... can blight the life of a child, reducing opportunity, diminishing his [or her] competence and self-esteem, alienating him [or her] from others, nurturing a meanness of spirit, and making him [or her] less a person than he or she could become. Nothing less than the future of children is at stake. (p. 1)"

It is assumed here that some forms of classification are necessary; not all children can be educated effectively in the same environment. Human dialogue and the practical organization of work requires some classification and grouping. Nevertheless, whatever system is used must give primary attention to the individuality of children.

One of the longstanding difficulties of special educators, who frequently work closely with physicians, psychologists and other professionals, is that they often find themselves trapped with classification systems that make sense in other professions but not in education--systems that center on etiology of defect or on simple, general prognosis, for example. Classification merely according to etiology is not useful in education. Knowing the cause of poor sight gives one little help in deciding what the child with poor sight is capable of learning or how (s)he should be taught. Similarly, it usually does not matter in educational planning whether the child's attentional problems stem from brain injury or other causes. Whatever use etiological variables may have in education, it is only in the context of educational decisions; the causes of behavior are relevant only if they make a difference in how we proceed with instruction. For the same reasons, simple general prognosis has limited usefulness for instruction.

Cromwell (1975) suggested a diagnostic/treatment formulation of the classification problem based on four classes of information:

A - history and parents' rearing practices;
B - current behavior;
C - intervention procedures (treatment);
D - prognosis, outcome.

Cromwell stated that he focused upon "the importance of building classification constructs based on the empirical relations among the four data classes" because "empirical relations . . . facilitate decision making about intervention" (p. 44).

The critical element for educators in this formulation is "C"--treatment or instructional intervention. AD, BD, and ABD relations are strictly prognostic and of little interest to educators. For example, we know that low-birth-weight babies tend to become below-average academic achievers in elementary school and that some children with highly punitive parents tend to show high "acting out" behavior: simple AD and BD relations that are prognostic and of little interest to the educator, although they may be to other professionals. For educators, the critical question is whether one can make a difference in outcome (D) through an intervention (C). Thus, from an educator's viewpoint, the meaningful relations are ACD, BCD, ABCD, and CD--all involving interventions. The educator becomes a significant factor in the life of the child precisely when the outcome (D) is conditional upon not just the characteristics of the child (A + B) but also the characteristics of the school environment (C). In the aptitude-treatment-interaction paradigm the As and Bs are the aptitudes and the Cs, the treatments; and the problem is to allocate children to treatment (or to design a treatment) that optimizes the outcome (D).
There are many myths among many regular educators about the categories of handicaps and the mystique of special education. The assumption seems to be that the special categories of teachers know special things to do to "fix" the problems of the children. In fact, special educators often do have highly refined skills for the very systematic and intensive instruction of children, but the skills do not have to be exercised in private and they can be shared with others. They can be joined with the skills of regular teachers and administrators to create diverse environments that will accommodate all, or nearly all, children—and that is the unfolding story of mainstreaming.

Summary

In the large sense, the movement to school children with unique learning needs in the educational mainstream is as much the result of the evolution of educational concepts as of judicial and legislative mandates. Educators themselves developed the new approaches which permit the individualization of programming in classroom settings. In this paper, there are discussed some of the shifts in concepts and new approaches that increase the capacity of the mainstream to accommodate children who show a wide range of learning needs.

In a sense, mainstreaming represents another wave of effort, in the wake of the Brown decision and the compensatory education movement, to provide equal opportunities for education to all children. The starting point is the individual, and the retraining of personnel is a keystone. Basic shifts in measuring and accountability systems are integral. Longstanding systems of classification and sorting are being reworked. Together, the various aspects of mainstreaming add up to an educational movement that is truly child-centered.


